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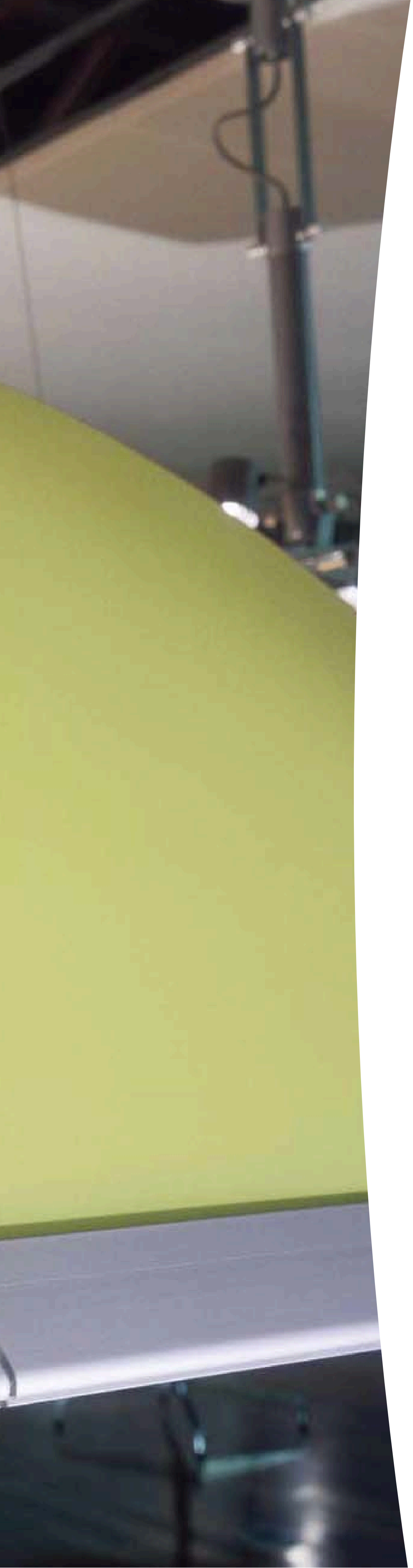

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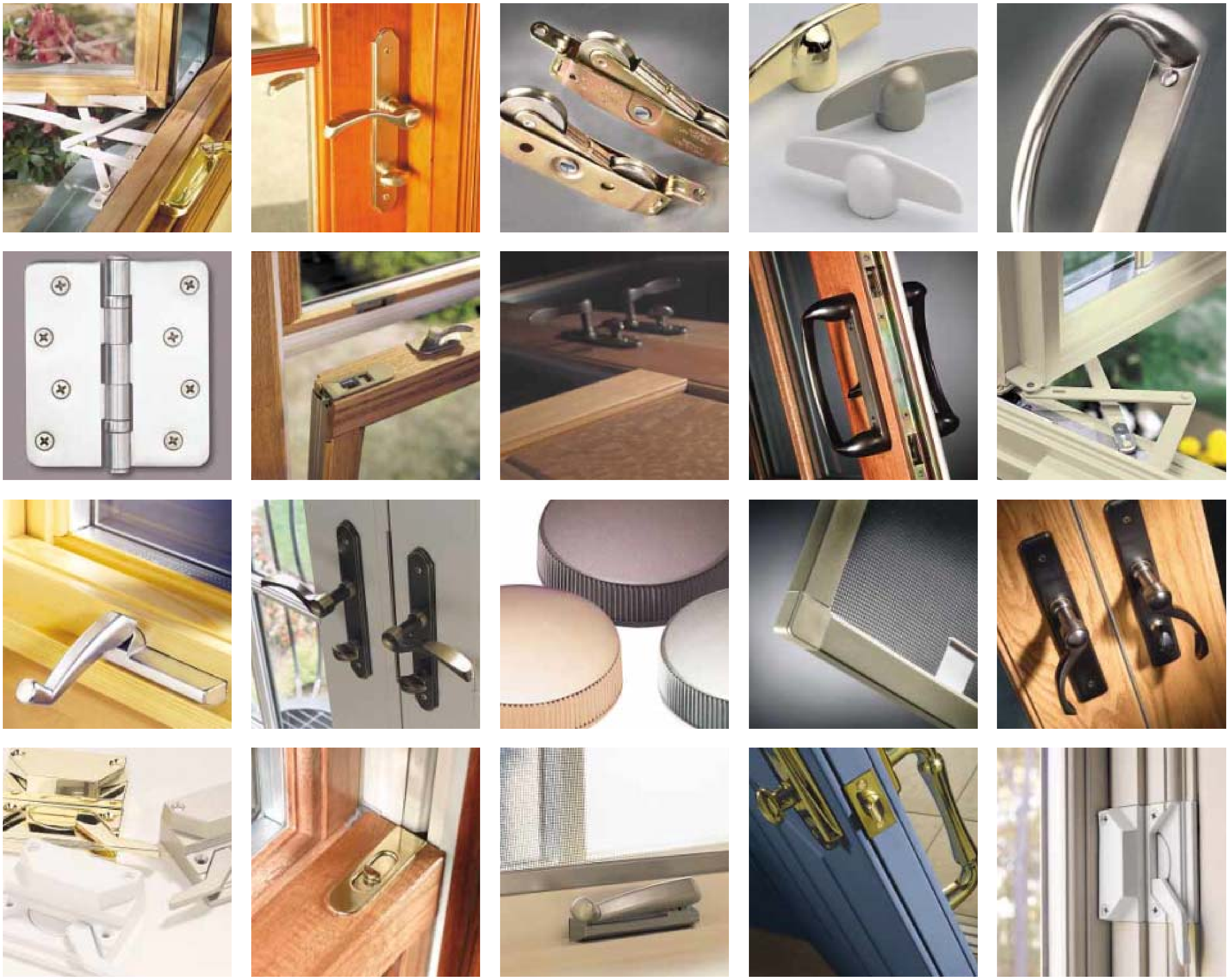

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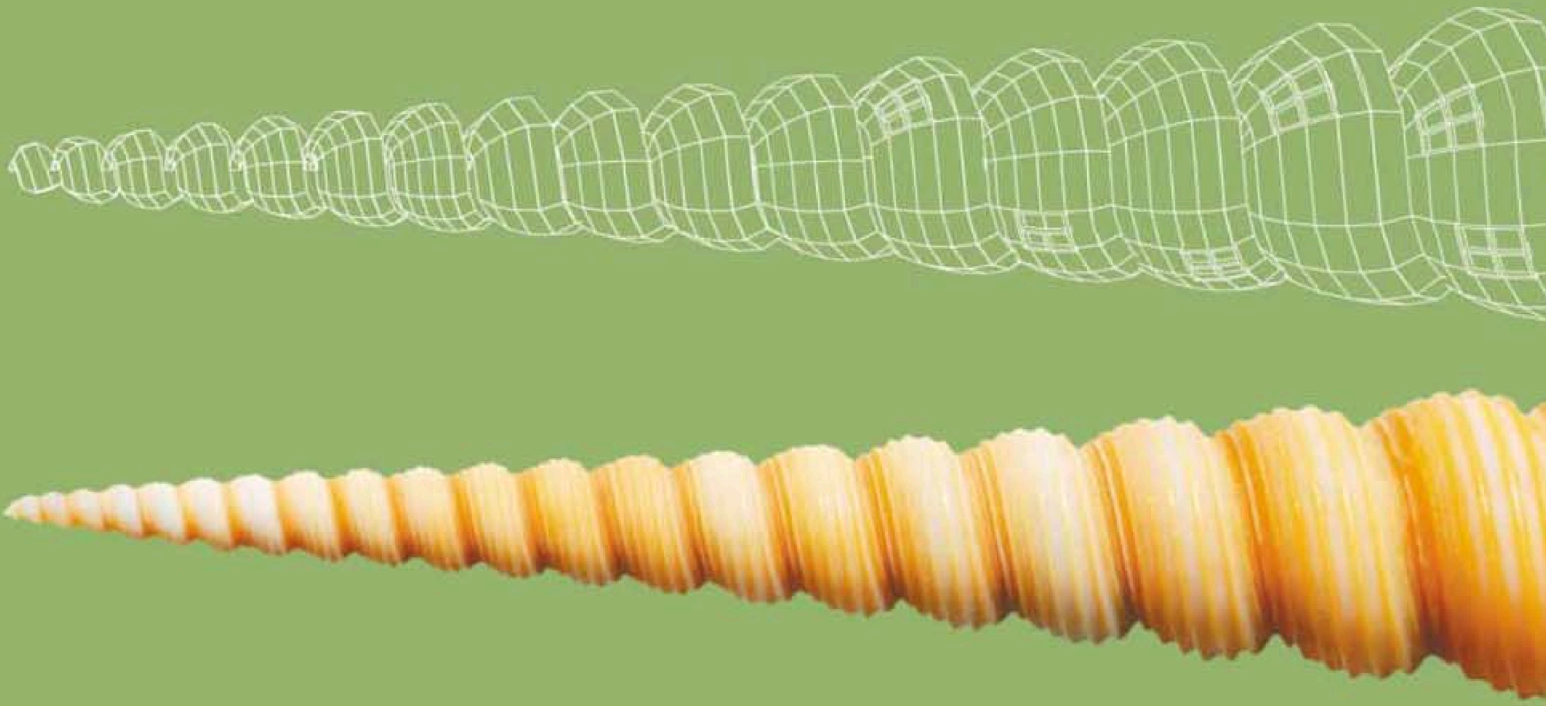

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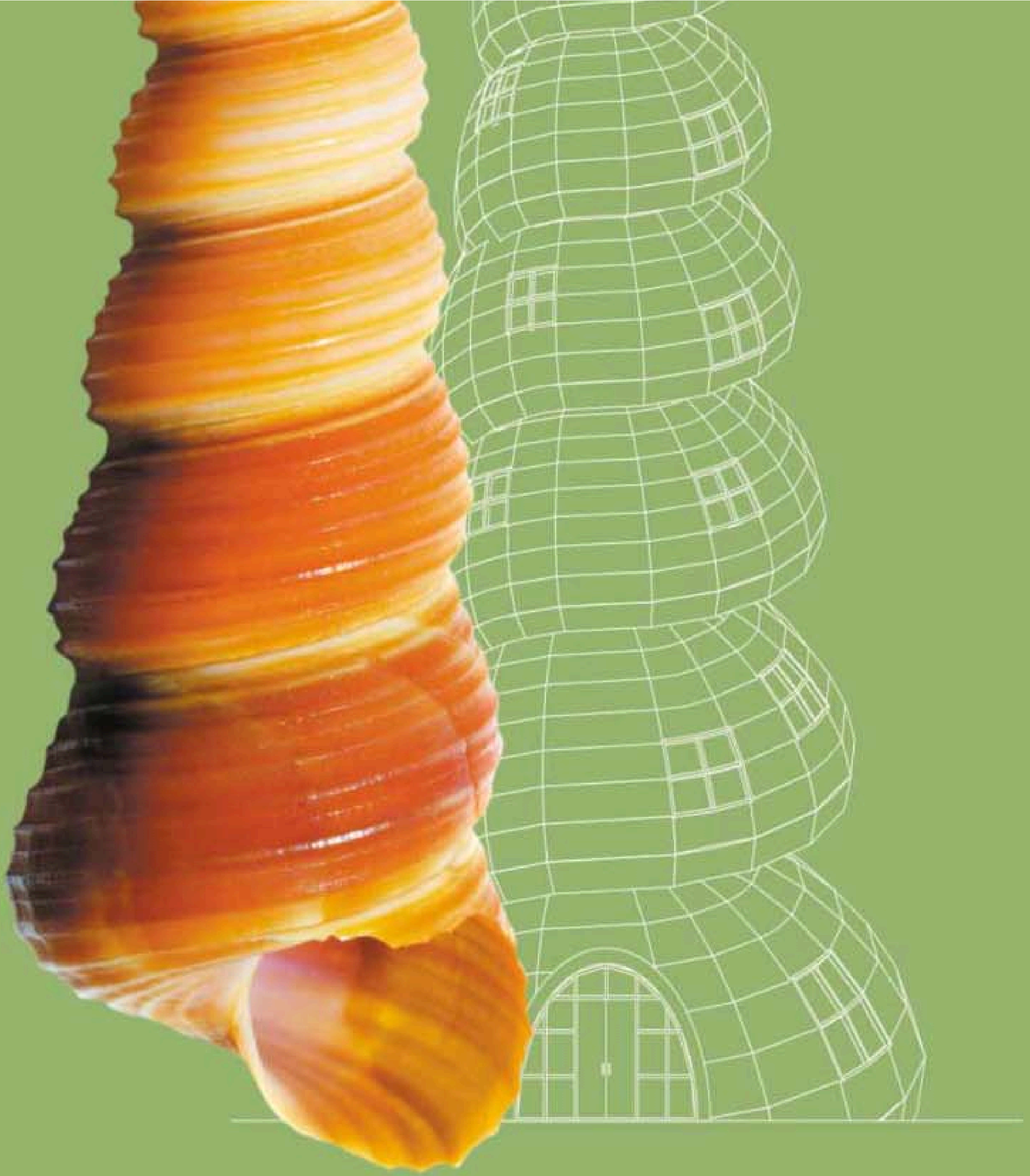

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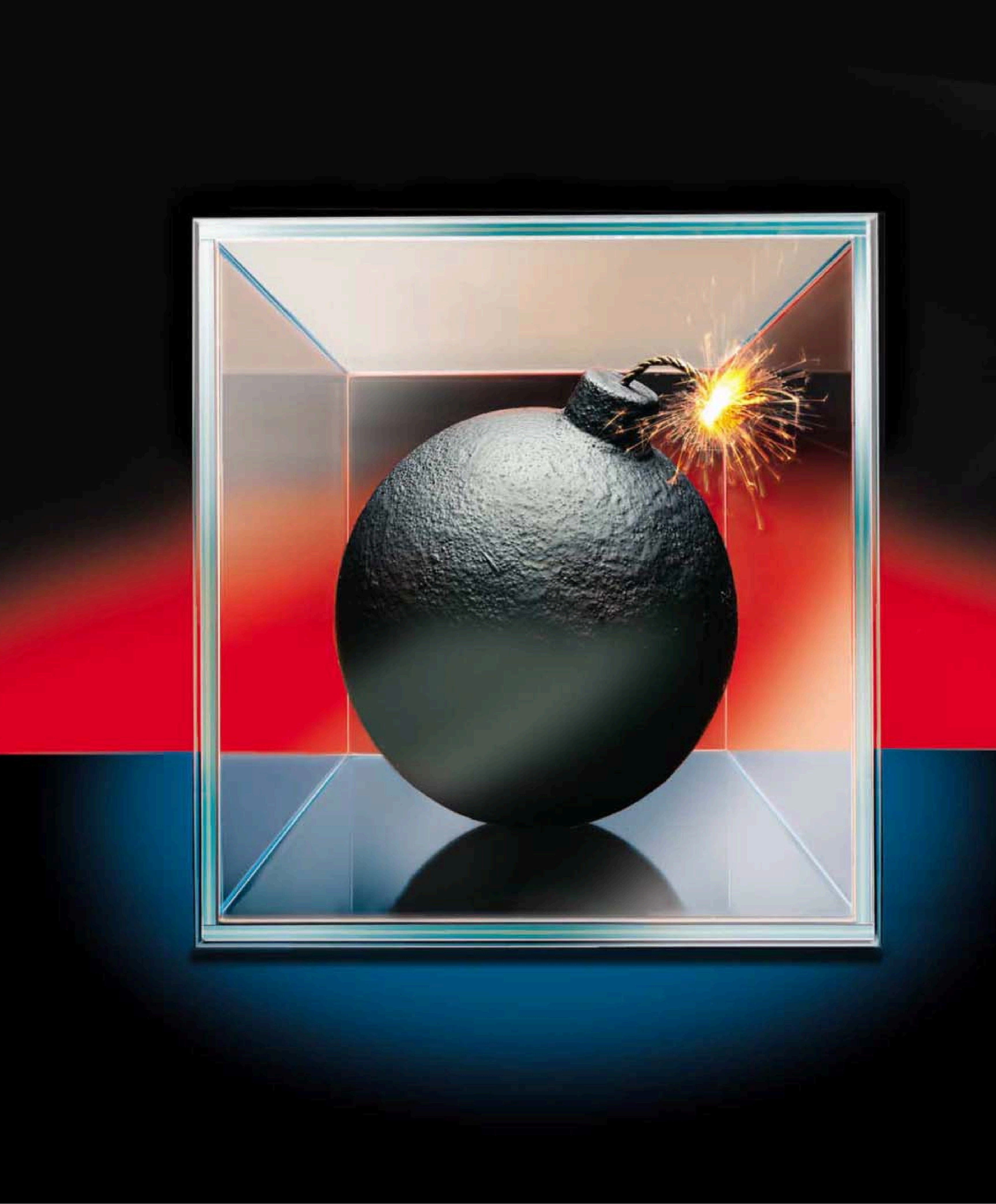

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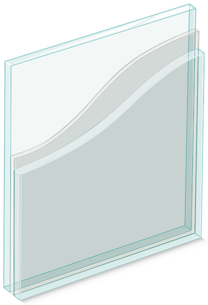

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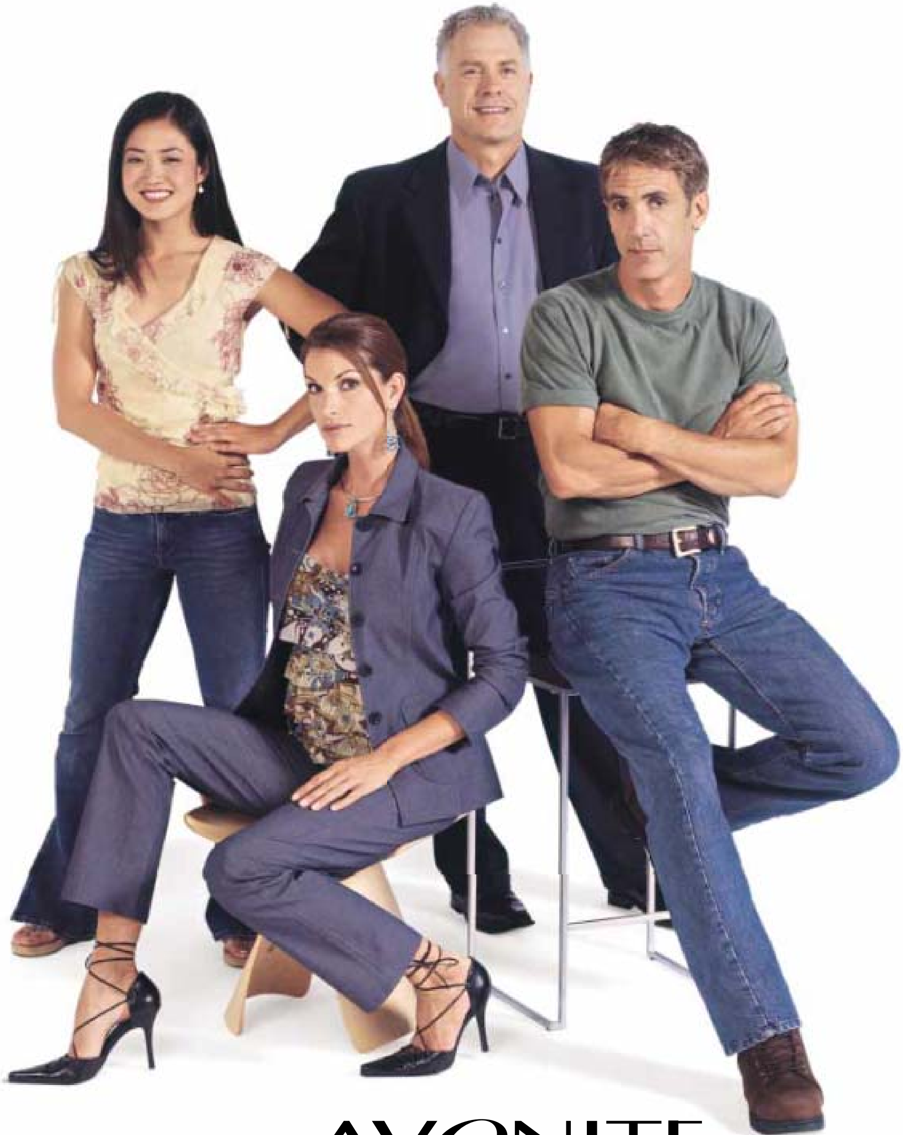

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* You can find these stories at ***www.architecturalrecord.com***, including expanded coverage of Projects, Building Types Studies, and Web-only special features.

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September 2004

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Record Interiors

Our 2004 interiors cover an array of functions, forms, and venues, ranging from a holistic pharmacy in Amsterdam to a cultural center in Warsaw; a café and a small museum in New York City; and a hotel in Berlin.

Even more interiors are on our site and are just as eclectic including the Virgin Airlines lounge at JFK in New York; an upscale clothier in Toronto; and a skin care clinic in Santa Monica, CA.

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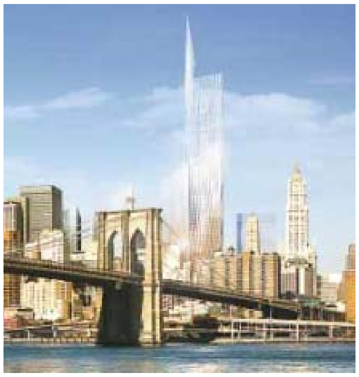

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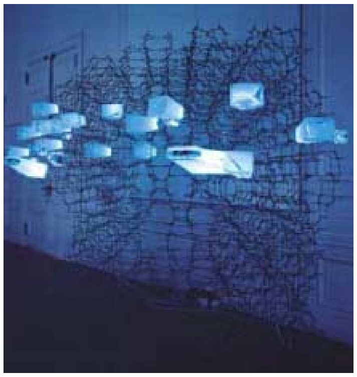
Ground Zero – Three Years Later

Explore the results of an extensive planning process that began just after the September 11 attacks. Exclusive to our Web site, you can read more architects' responses to the current design plans and see Ground Zero from above with our interactive map.



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Provoking the senses through their architecture, Boston's Studio Luz describes just a few of their inventive projects. On the opposite coast, Marques Davis devises a plan to bring architectural gatherings to the people with Architecture Radio.

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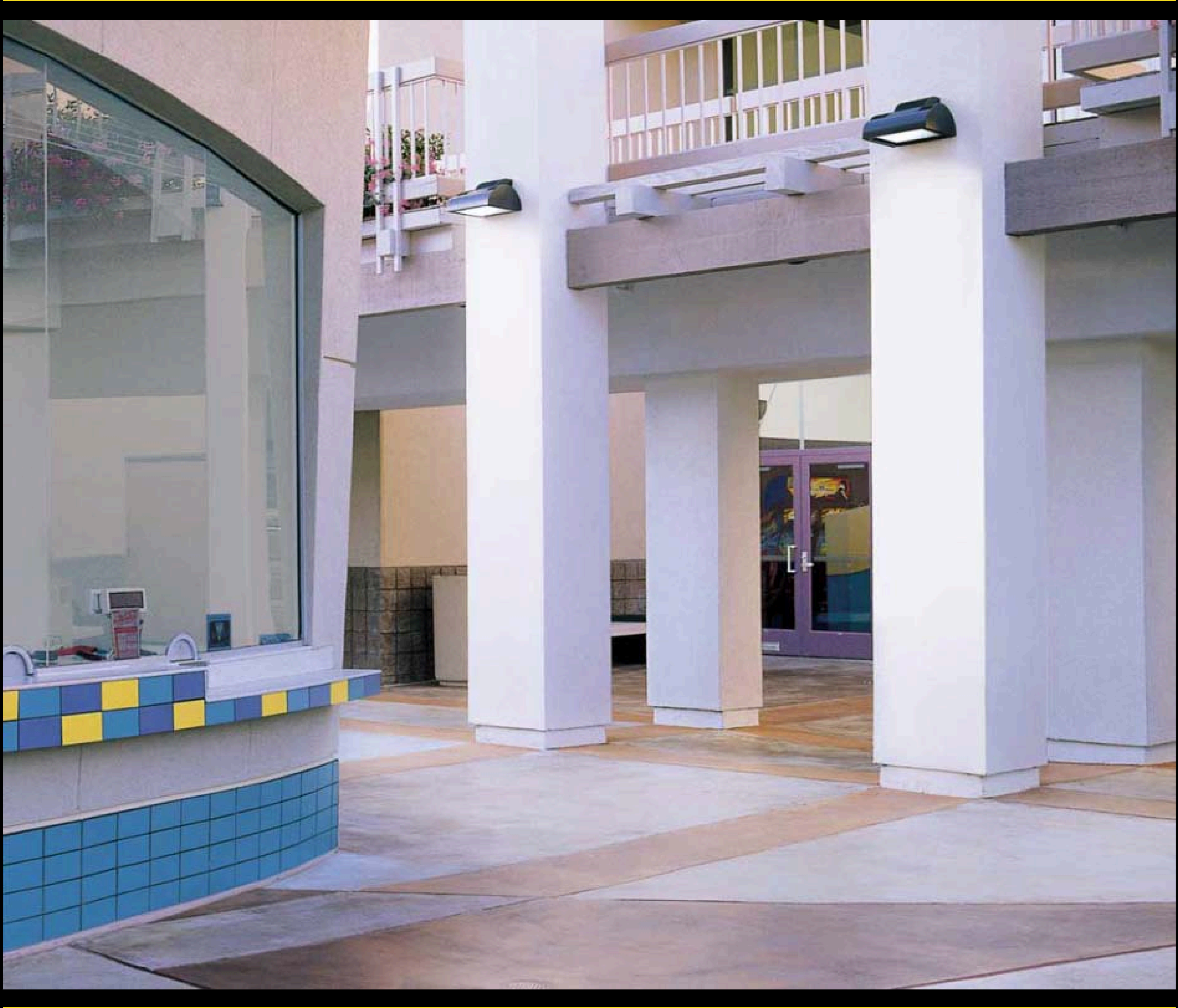

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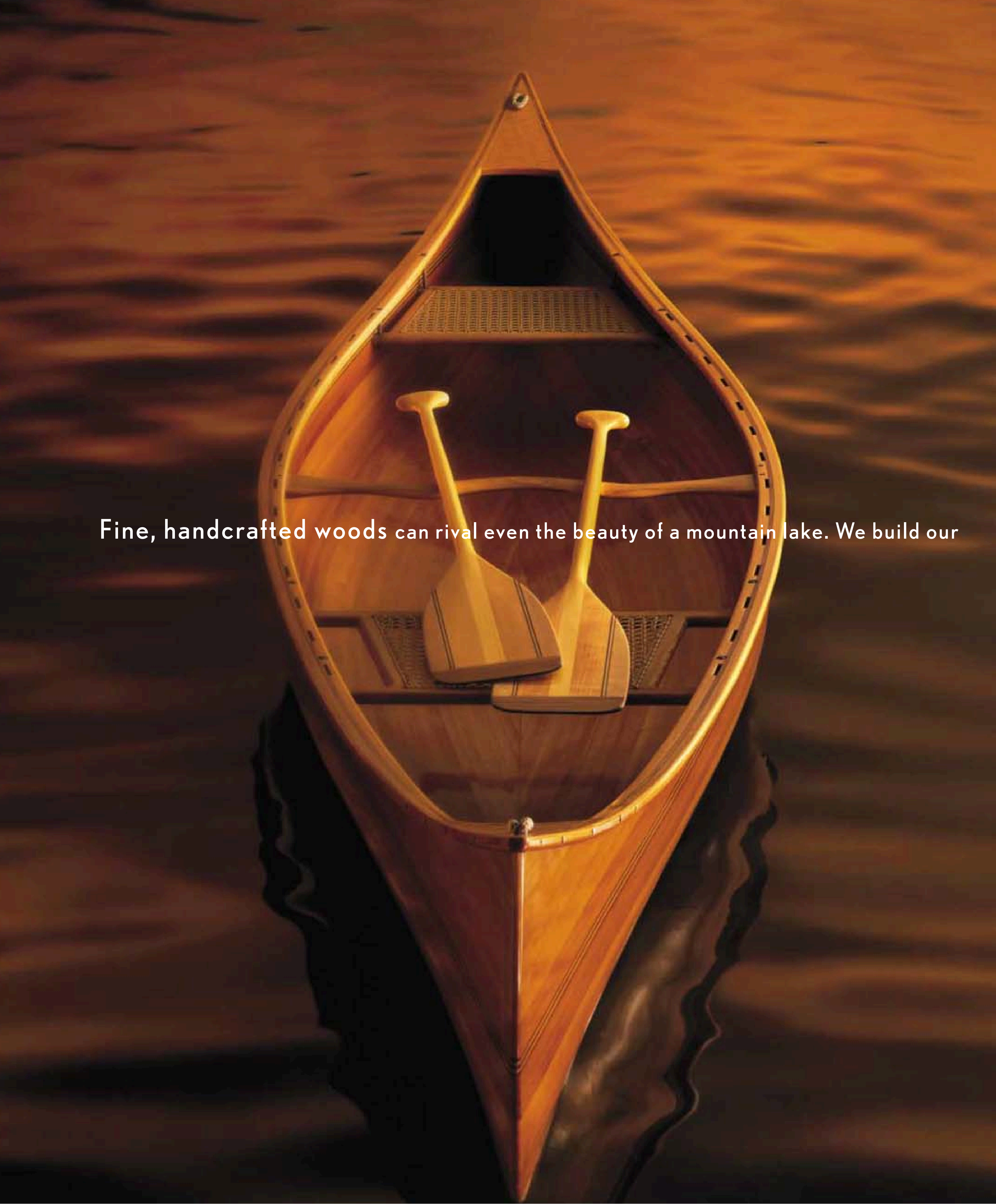

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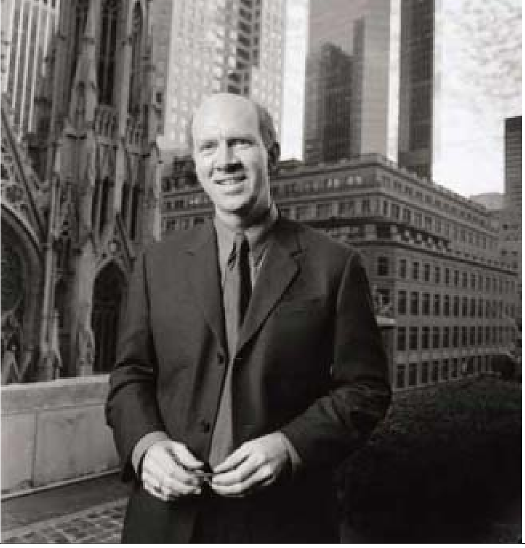

New Kind of Hero

Editorial

By Robert Ivy, FAIA

When the last crowds have dispersed from the Plaka in Athens and the television ratings have been scrutinized high in midtown Manhattan, the real hero of the 2004 Olympics will emerge. Not winner Michael Phelps, the swimmer who generously removed himself from a slot in a final competition to give another teammate a shot at gold, nor Natalie Coughlin, with her sparkling, multiple medals. Instead, the surprise star will turn out to be Athenian architecture, both Classic and Modern, which has outshone them all.

These Olympics had all the makings of a Greek tragedy. Until the last moment, it seemed as if the impossibly complex new Olympic Stadium would not debut for opening day. What was this small nation of 11 million people up to, commissioning such ambitious projects with drop-dead deadlines? Yet planners tightly clutched a trump card—the stadium's roof had been fabricated off-site and dropped into place moments before curtain time. Ah, sweet victory, with applause and sighs all round.

From the theatrical opening ceremonies, punctuated by fireworks, to the glancing morning light, the Olympic Park both provided and took center stage. Seen by upwards of a billion people, the primary structures arched more than 230 feet above Athens's low-scale cityscape with a graceful, billowing signature emblematic of human accomplishment and artistry. Only the Parthenon, iconic temple on a hill, surpassed the newer additions; Olympic architecture had assumed the contemporary symbolism for a reinvigorated nation. By now, the world can visually identify the individual structures, if not name them—Velodrome, Agora, Olympic Stadium, Plaza of Nations, Entrance Plazas, Olympic Fountain, and Cauldron.

Designed by the Spanish-born architect Santiago Calatrava, the entire complex represents a unique personal achievement. Few individual architects or planners, including the 18th-century utopians Ledoux and Boullée, or the 20th-century's Piacentini at Rome's Fascist EUR, have composed and realized such a fulsome urban vision. Calatrava's program was thorough, including master planning and rethinking the existing 250-acre park, while adding major new public spaces and designing new additions to the ensemble.

Sleek, melodic, distinctly Mediterranean, these arching buildings employ familiar architectural motifs and materials to capture moment and redefine place. First and most obviously, they employ structure as a critical, visible element (not surprising for Calatrava, also a civil engineer). At the stadium, for example, the architect employed lithe, dual arches of tubular steel, which rise like a sustained tone, then drop to a single pin. The roofs, composed of translucent polycarbonate, hang suspended from cables, caught in midflight and poised as a shading device for spectators within the arena. The total effect is of controlled rapture, analogous to sport or to dance.

Other designs reveal the fourth dimension. To capture time, the architect employed pattern and repetition, forging a linked sequence of vaulted pergolas into a long semicircular walkway called the Agora. There, light and shadow flit between alternating realities, the whole animated by the rhythm of the human footstep. Other buildings undulate. Across the plaza from the Agora, a 65-foot-tall screening wall (the Nations Wall) rolls in a wavelike motion—a sculptural essay rendered lifelike through hundreds of straight metal wands, orchestrated and motile.

Critics may suggest that in an age that celebrates diversity, no single consciousness need design a site so pervasively. Some might cavil that Calatrava's palette seems obsessed with similar, highly personal themes, from the anthropomorphic to the kinetic. The long view of history, however, suggests that other great architects, from Phidias in the 5th century B.C. *to our own time, have spent their lives refining an idiom. Calatrava's "researches," as he calls them, seem to be centered on the artful response of human beings to physical laws.*

The fact remains that in Athens, one man's vision has changed a city and our perception of a country. Whether as visitors to the grounds or as televoyeurs, our view of Greece, formerly bounded in trabeated Classicism, has shifted positively with a new century. The redefinition is near-complete: The land that provoked Aristotle's thought on the nature of beauty receives a new definition, while the Olympic Games anoints a new kind of hero.

Robert Ivy

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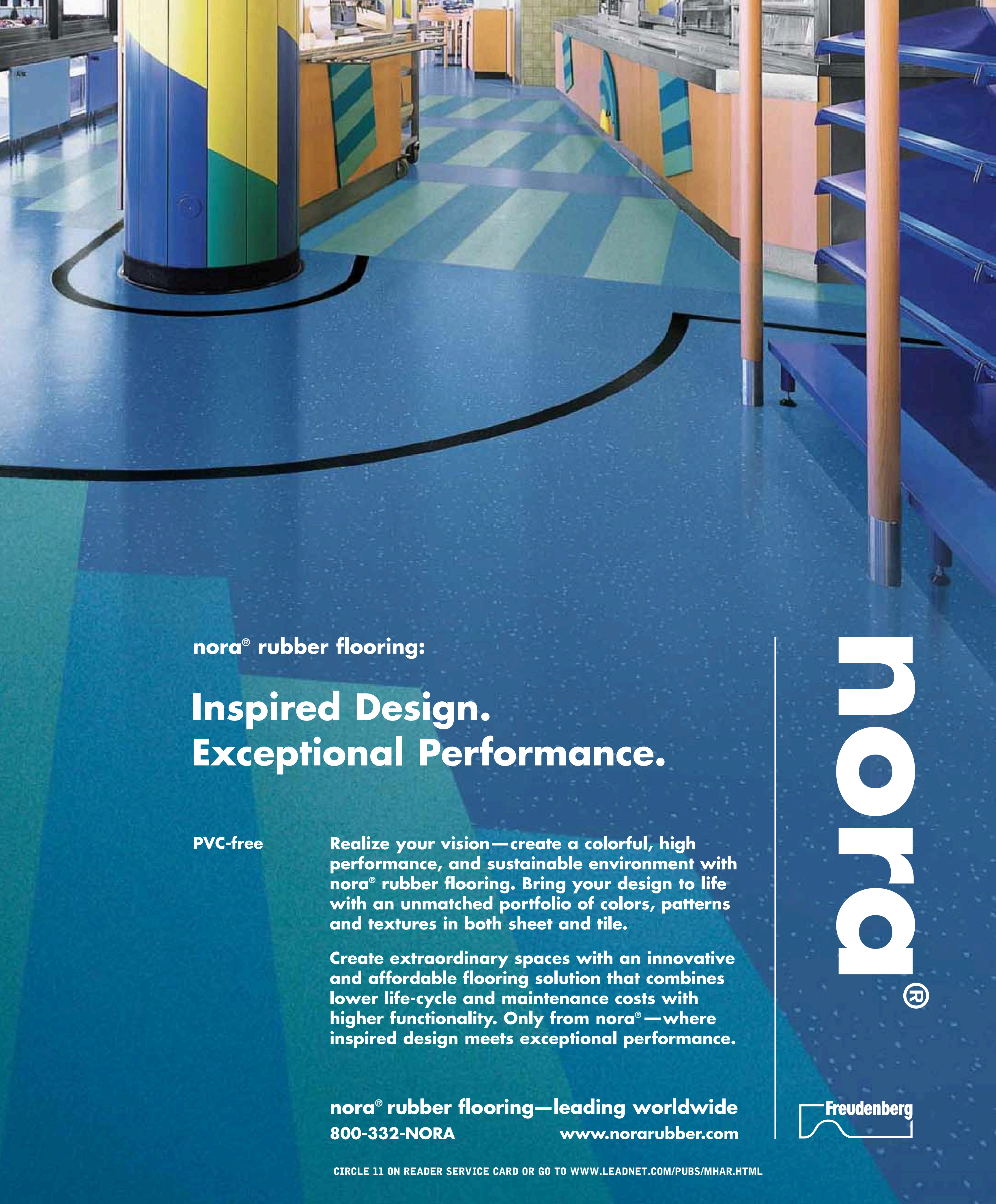

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Letters

Sticking with the plan

I was quite thrilled to see Chicago's new Millennium Park featured in August's Record News ["Sunday in the Park with Architecture," page 23]. But I must set the record straight regarding Skidmore, Owings & Merrill's role in the project.

SOM's "original Beaux Arts scheme" was not "mostly scrapped," as writer Sam Lubell stated. This plan formed the armature within which special feature pieces work to enhance this section of Grant Park. There are still major Beaux Arts influences at Millennium Park—fitting, given the venue is a late addition to Grant Park, itself a Beaux Arts treasure. SOM's master plan for Millennium Park evolved and remained a guiding document throughout the five-year life of the project. As the project changed and grew in scope, SOM was there to adjust and refine our master plan. But make no mistake: From the outset, the master plan called for the park's most distinctive features, including the band shell and the oval shape of the adjacent lawn; the art pieces; the outdoor ice-skating rink; the fountain; the traffic circulation system—even the reconstruction of the peristyle that once stood at what is now the north end of Millennium Park.

In addition, I was involved in fund-raising activities for Gehry's footbridge, and sat on committees involved in the selection of Gehry, artist Anish Kapoor, and park designer Kathryn Gustafson.

Millennium Park fulfills Chicago's decades-long dream to turn the long-barren 20 acres within Grant Park into a civic showplace. SOM is proud of the important role we've played in helping make the dream a reality.

Adrian D. Smith
Consulting Design Partner
Skidmore, Owings & Merrill

Proceeding boldly

My daughter was on the team of four fifth-year architecture students who, for their thesis project, not only designed and built the beautiful Antioch Baptist Church ["Samuel Mockbee," June 2004, page 184], but also worked with the 15 parishioners to build this project from the "ground up." The students also had to research and find the funds to build this very ambitious project.

As a proud parent, I would like to see these students receive the accolades due to them. They are: Gabrielle Michaud, Marion McElroy, Jared Fulton, and Bill Nauck. They, along with their families and friends, worked tirelessly over a period of 15 months to complete this awesome church, using the original pews and all the wood from the old church—the most ambitious and beautiful project yet to be completed in the Rural Studio.

Sambo Mockbee was their mentor, who sadly passed away while the church was being built. These four students did what he taught them: "Proceed and be bold."

Beverly Michaud
Huntsville, Ala.

Saluting a memorial

After reading Paula Deitz's Commentary on the World War II Memorial [August 2004, page 71], I must express my dissent. Following a recent visit to Washington, D.C., and an extensive walking tour of its landmarks, I can honestly say that no memorial could have been more fitting than Friedrich St. Florian's design.

The memorial's arches effectively serve to remind Americans of the triumph over evil, despotism, and tyranny, while with its wall of bronze stars it cautiously reminds us of the human cost of war. The memorial, more than any in a long time, also seems to be one which is truly enjoyed by all of its visitors—and, contrary to Deitz's opinion, I think that is a good thing.

Not every monument or memorial has to be a grim reminder of the past. Thankfully, this one reminds Americans of their victory. I know it would remind my grandfather of his proud service during the war. Isn't that what really matters?

Joshua W. Miller, Assoc. AIA
Architect, U.S. Air Force
Sheppard AFB, Wichita Falls, Tex.

Picture perfect

I must compliment the exceptional photography featured in ARCHITECTURAL RECORD. Particularly inspirational are Timothy Hursley's photos for the July coverage of Seattle's Central Library [Projects, page 88] and Anton Grassl's and Paul Warchol's photos for the Kendall Square article [Projects, page 102], also in the July issue. I do a lot of architectural photography and can appreciate the level of skill behind the exceptional images that are ARCHITECTURAL RECORD's hallmark. The magazine showcases a level of quality that I am always working toward. Keep up the good work and excellent articles.

Dan Reaume
LaSalle, Ontario

Thin dissonance

In Robert Campbell's report from MIT's conference on cutting-edge architecture [Critique, July 2004, page 61], his characterization of Frank Gehry and Robert Venturi as opposites seems myopic. The work of the two is in fact quite similar, as both architects seem fascinated with playful facades. Campbell himself describes Gehry's Stata Center as "deliberate metaphor," a phrase that could easily refer to any of Venturi's own work. And has anyone noticed how much the Stata resembles certain late-generation Vegas casinos—particularly New York, New York? Who is learning from Las Vegas now?

Lance Hosey, AIA
Charlottesville, Va.

Electrifying information

Barbara Knecht writes a nice article about the new mass transit stations ["Mass Transportation to Get Sleek and Daring," June 2004, page 289], but she doesn't seem to know much about trains. I quote: "Unlike a conventional steel-wheeled train, a Maglev train doesn't use fossil fuels." Almost every mass transit system, from light rail to subway to San Francisco's cable cars, runs by electricity, just like the Maglev systems. Even Amtrak, in Knecht's cities of New York and Boston, runs on electricity—mostly obtained by burning coal. Only the long-distance Amtrak trains crossing the country run on diesel fuel, mostly because the investment in electrifying a rail line with low density of use is not practical.

Albert J. Vegter, AIA
Ann Arbor, Mich.

Corrections

The July feature on architecture centers [page 81] incorrectly noted the name of the architect for the Chicago Architecture Foundation's ArchiCenter—he is Jaime Velez of SOM Chicago. Also in the July issue, one of the photographers for Kendall Square's Genzyme Building was miscredited—his name is Anton Grassl. The images that appear on page 142 of the June issue's AIA Honor Awards coverage were incorrectly credited—the photographer is Nic LeHoux. The subject's name in the August Profile [page 260] was mispelled—the correct spelling is Frances Daly Fergusson.

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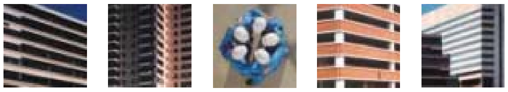

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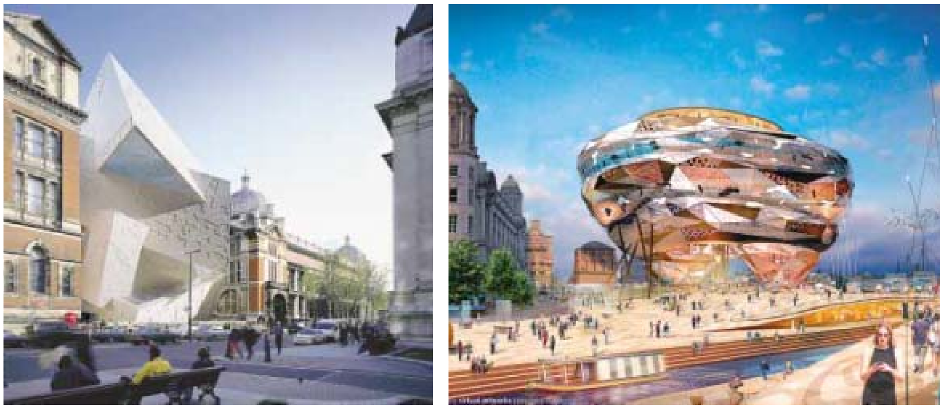
Record News

Highlights Grand Avenue project in L.A. gets under way p. 28
Report assails Scottish Parliament project p. 34
High schools on the boards p. 38
Special section: Ground Zero three years later p. 46

Major world projects facing uncertain future



The fate of Libeskind's Spiral in London (left) and Alsop's Cloud in Liverpool (right) is uncertain.

U.K.'s "Cloud" and "Spiral" will likely be canceled

Responding to austerity measures that reflect worldwide economic conditions, two vaunted architectural icons planned in the U.K. appear to have bit the dust in late July. First, Will Alsop's Cloud, the centerpiece of Liverpool's year as European Capital of Culture in 2008, was deemed "no longer viable" by the government partners leading the scheme. Costs of the mixed-use waterfront scheme had risen from an estimated $420 million in 2003 to $595 million. This year, a major cost increase in the proposed residential element of the scheme was deemed problematic, challenging its viability.

The Cloud was intended to capture in a contemporary language the grand spirit of three other historic waterfront buildings, the Liver, Cunard, and Port of Liverpool, and be a "Fourth Grace." Its exuberant design, centered around an almost unfathomably complex, amorphous 3-tier structure, was described by a local as a "diamond knuckleduster." In spite of English Heritage support, its lack of a resolved program hampered both public acceptance and a full go-ahead by the planners.

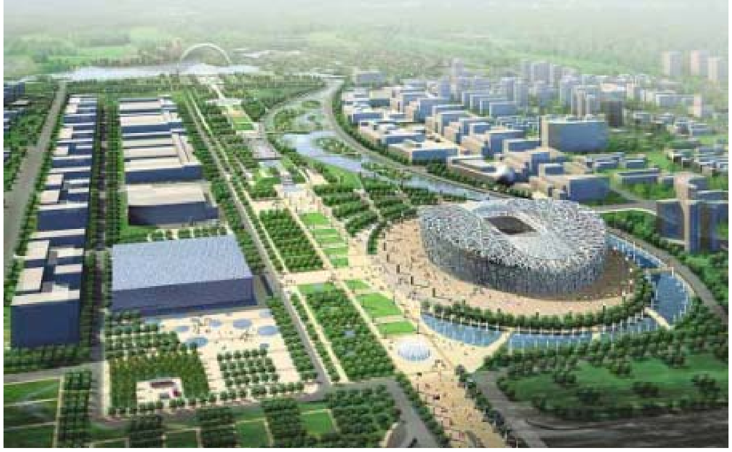
Meanwhile, in London, Daniel Libeskind's Spiral extension to the Victoria & Albert Museum (V&A) failed to receive a $28 million Lottery grant toward its $129 million budget. The scheme, first unveiled in 1996, would extend the museum's gallery and education space for contemporary arts and design. The building plan included walls rising in a series of inclined planes to form a self-supporting spiral. Its exterior was to have been clad in hand-crafted tiles. Some critics felt the museum should focus more on existing facilities than on such a grand gesture. The Spiral got the green light from the local council and the Royal Fine Arts Commission in 1998. This is the second time the building has failed to win a Lottery grant, and V&A trustees acknowledged that the future of the scheme was now "seriously jeopardized."

While the decision will not affect the V&A's wider future plans, including new $46 million Medieval and Renaissance galleries, it likely sounds the death knell for yet another cultural landmark building proposal. While Britain enjoyed the largesse of the Lottery at its height in the mid-1990s, it now appears that major buildings requiring funding need a design encapsulating an equally powerful sense of purpose to be deemed viable. *Lucy Bullivant*

Beijing Olympic Stadium project halted

Construction for the signature project of the 2008 Beijing Olympics, a stadium designed by Swiss architects Herzog & de Meuron with engineer Arup, has been halted. "The construction of the national stadium has been suspended temporarily," says Diana Dai, a spokeswoman for BOCOG, the agency administrating the games. The project has fallen victim to budget and feasibility concerns, or as Dai puts it, "The idea of hosting a 'prudent' Olympic Games is the main reason for the changes."

A report posted on August 13 by Xinhua, the state news agency, noted, "Construction experts claim that the plan will be difficult to realize and is expected to consume a massive 50,000 tons of iron and steel." The stadium was to be clad in a weblike series of huge steel beams that undulate to create what many call a vast "bird's nest." It was to have 80,000 seats at an estimated cost exceeding a half-billion dollars.



Herzog & de Meuron's Beijing Olympic Stadium (above) will be scaled down.

Olympic organizers say the stadium project has not been shelved entirely and that a revised program will soon be announced. The new scheme will be much more modest. The Olympic organizing committee hopes to tone down the scale and expense of the Olympic plans, which have been markedly ambitious. This is in line with a recent change in Chinese government policy that aims to cool down the country's substantial building spree.

Still, Office for Metropolitan Architecture's (OMA) huge CCTV headquarters, recently rumored canceled, seems to have escaped the new austerity moves. The broadcast center would be OMA's largest built work to date and will cost an estimated $730 million. Besides traffic impact adjustments, "there are absolutely no changes," says Ole Scheeren, the project leader and one of OMA's four partners. *Daniel Elsea*

IMAGES: COURTESY STUDIO DANIEL LIBESKIND (TOP LEFT); ALSOP ARCHITECTS (TOP RIGHT); HERZOG & DE MEURON (BOTTOM RIGHT)

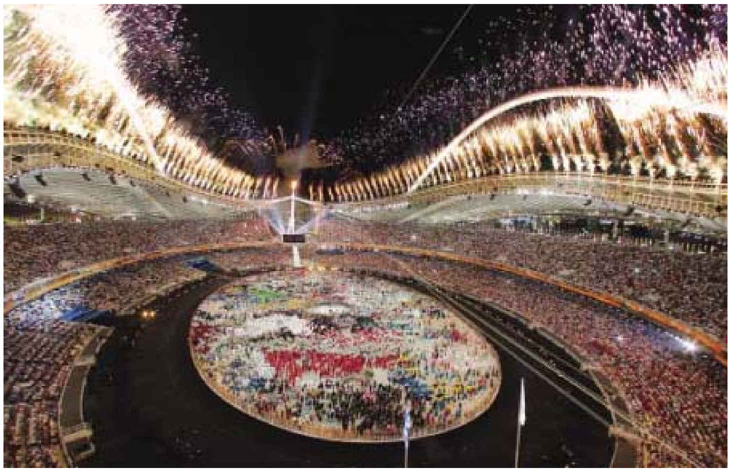
Architecture takes center stage at Athens Olympics

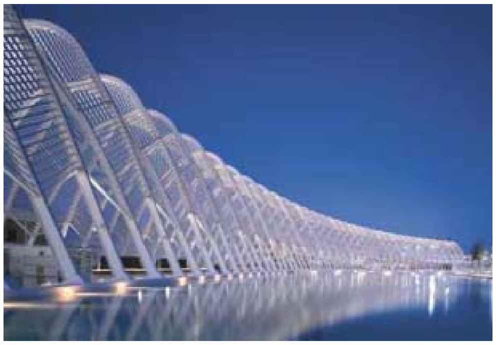
The Athens Olympics' opening ceremonies on August 13 included 72,000 spectators, athletes from more than 200 countries, performers dressed as centaurs and Greek sculptures, and numerous heads of state. But they all shared the stage with what was perhaps the show's main attraction: Santiago Calatrava's Olympic Stadium roof.

The soaring, arched covering, built over a renovated stadium, consists of two leaf-shaped, 9-ton steel wings fitted with tinted glass. The Spanish architect designed much of the Olympic Sports Complex—dominated by bright white marble, concrete, and tile—including the slender Olympic Cauldron; the Agora, a concourse covered with an elegant steel-framed covering; the Olympic Velodrome, designed with roof wings similar to the stadium's; and the Nations Wall, consisting of more than 1,000 moving steel beams.

While delays pushed construction on many of the games' structures to the last minute, all were completed in time, although much landscaping remained to be done.

The price tag for the games, which includes significant infrastructure improvements in Athens and surrounding areas, reached more than $7 billion. Security costs exceeded $1 billion. *S.L.*





Santiago Calatrava's Olympic Stadium (top) aglow in light, color, and fireworks for the 2004 Olympic opening ceremonies on August 13. Calatrava designed several other structures, including the Agora, an elegant covered walkway (left).

After long search, Columbia names architecture dean

Mark Wigley

Following an extensive search, Columbia University's Graduate School of Architecture, Planning and Preservation has named Mark Wigley its new dean.

Interim dean of the school since September 2003, Wigley succeeds Bernard Tschumi, who held the post for 15 years and remains on the faculty. The far-reaching candidate list included recent Pritzker winner Zaha Hadid and Beijing-based architect and teacher Yung Ho Chang.

Wigley has served as guest curator for exhibitions at institutions such as the Museum of Modern Art and The Drawing Center in New York. He is the author of numerous books, including *Constant's New Babylon: The Hyper-Architecture of Desire* (1998). Before joining Columbia in 2000 as director of advanced studios, Wigley taught at Princeton, where he was director of graduate studies in architecture.

Columbia president Lee Bollinger notes that Wigley is especially well-suited to the task of interweaving disciplines and departments at the school. This is a job Wigley takes seriously, alluding to the school as an "interdisciplinary think tank" that continually challenges the profession. Most important in this effort, he says, are the students: "They come wanting to change the way the profession thinks, and we learn from them and try to help them try to redefine architecture." *S.L.*

Team chosen to develop and design Grand Avenue in Los Angeles

In early August, the Los Angeles Grand Avenue Authority awarded the Manhattan-based Related Companies an "exclusive right to negotiate" agreement for the much anticipated Grand Avenue housing and retail development in downtown Los Angeles.

The decision came after several months of discussion with Related, which recently completed the Time Warner Center in New York, and runner-up Forest City Enterprises of Cleveland. The development may include up to the 3.2 million square feet on and around the street, which is lined by commercial high-rises and cultural landmarks such as the new Disney Concert Hall, the Museum of Contemporary Art, and the Dorothy Chandler Pavilion. In addition, civic leaders want to create a park on 16 acres of underused land that connects Grand Avenue to City Hall, envisioning a central location for civic events, cultural gatherings, and outdoor performances.

Related's large design team includes John C. Cushman III; MacFarlane Partners; Skidmore, Owings & Merrill; Morphosis; Elkus/Manfredi Architects; Gustafson Guthrie Nichol; Levin & Associates; Suisman Urban Design; Biederman Redevelopment Ventures; Richard Koshalek; Lee Andrews Group; Merry Norris Contemporary Art; Polis Builders; Saybrook Capital; and Manatt, Phelps & Phillips.

"There is a huge amount to work with, and an opportunity to put together a cultural core that could change the urban typology of downtown," says Thom Mayne of Morphosis, who notes that design hasn't begun, but plans to have his first meeting with David Childs of SOM in early September.

According to Jan Perry, vice chair of the Grand Avenue Authority, public input on design and planning will be solicited through community outreach programs. *Allison Milionis*

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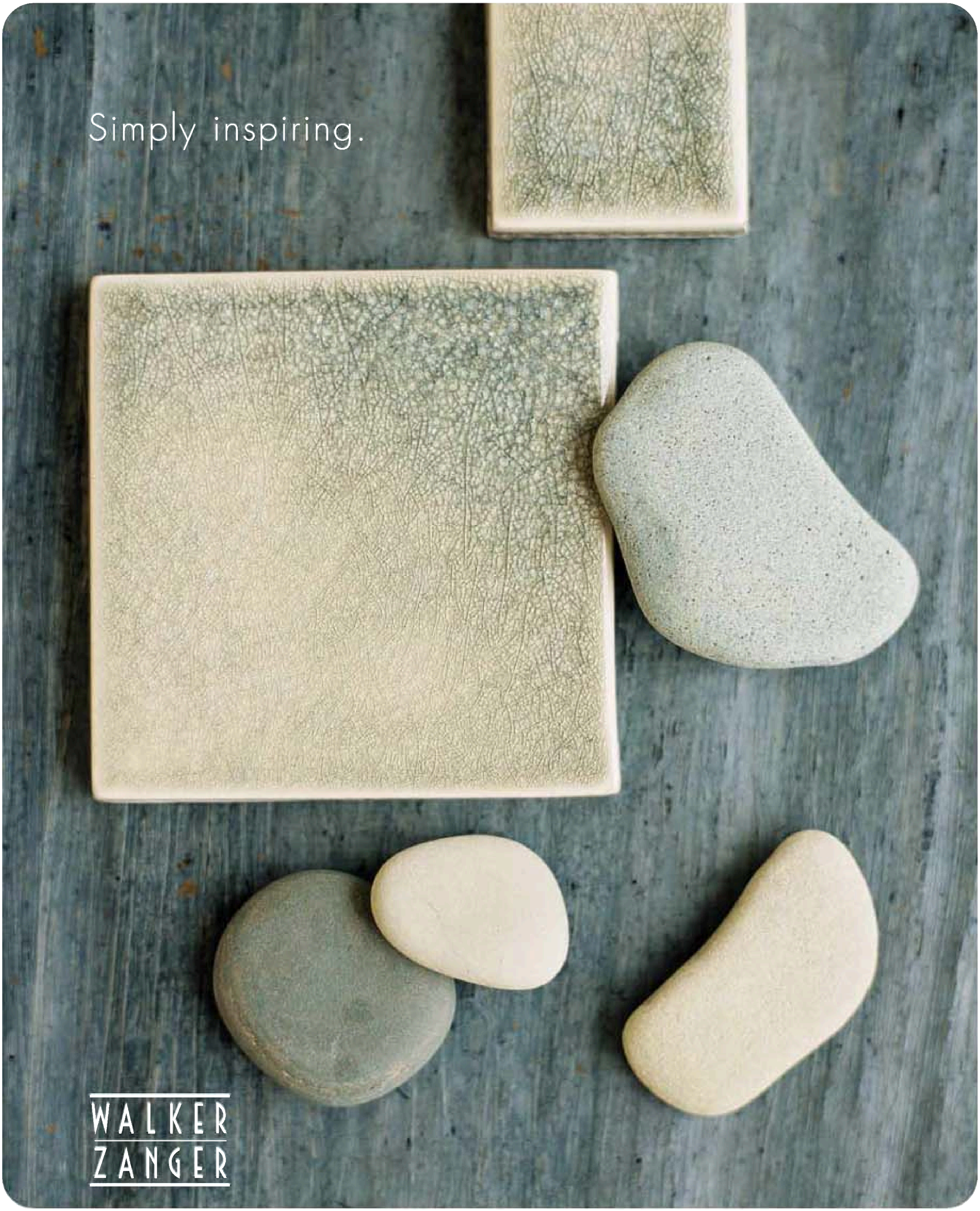
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Tension between architects and interior designers over titles

Recent efforts by interior designers to grant professional titles to qualified practitioners have upset some in the architecture business.

The so-called "title" initiatives, meant to ensure that designers have proper qualifications before receiving the title "Interior Designer," have already passed in 17 states and have been proposed in several more.

"It's protecting the consumer," notes Anita Baltimore, president-elect of the American Society of Interior Designers. "They need to know they are getting a professional who has passed minimum standards."

But the efforts have met with some consternation from AIA officials, who worry that the title measures may lead to confusion about designers' duties or spawn "practice acts," granting professional (not just title) status to interior designers. Practice acts, they say, could mistakenly infringe on architects' roles, leaving interior designers with the ability to, for instance, review building plans, which they fear could threaten the safety and welfare of clients.

"In the built environment, architects are seen as guardians of the public. Until another profession meets training and qualification criteria equivalent to architecture's minimum standards for responsibility, we don't think it's a good idea," comments Paul Mendelsohn, senior director of state and local affairs for the AIA. "We're worried these acts might be misconstrued by clients," adds Peter Arsenault, AIA, president of the AIA New York State Chapter. "If interior designers want to design an office and approve construction documents, that's another story altogether."

Mendelsohn adds that three of the five states to pass title acts (Florida, Alabama, and Louisiana) have approved subsequent practice acts, which he says further muddy the line between architects and interior designers. "There's a trend nationwide of getting a foot in the door with a title act and then making it a full practice act," he says.

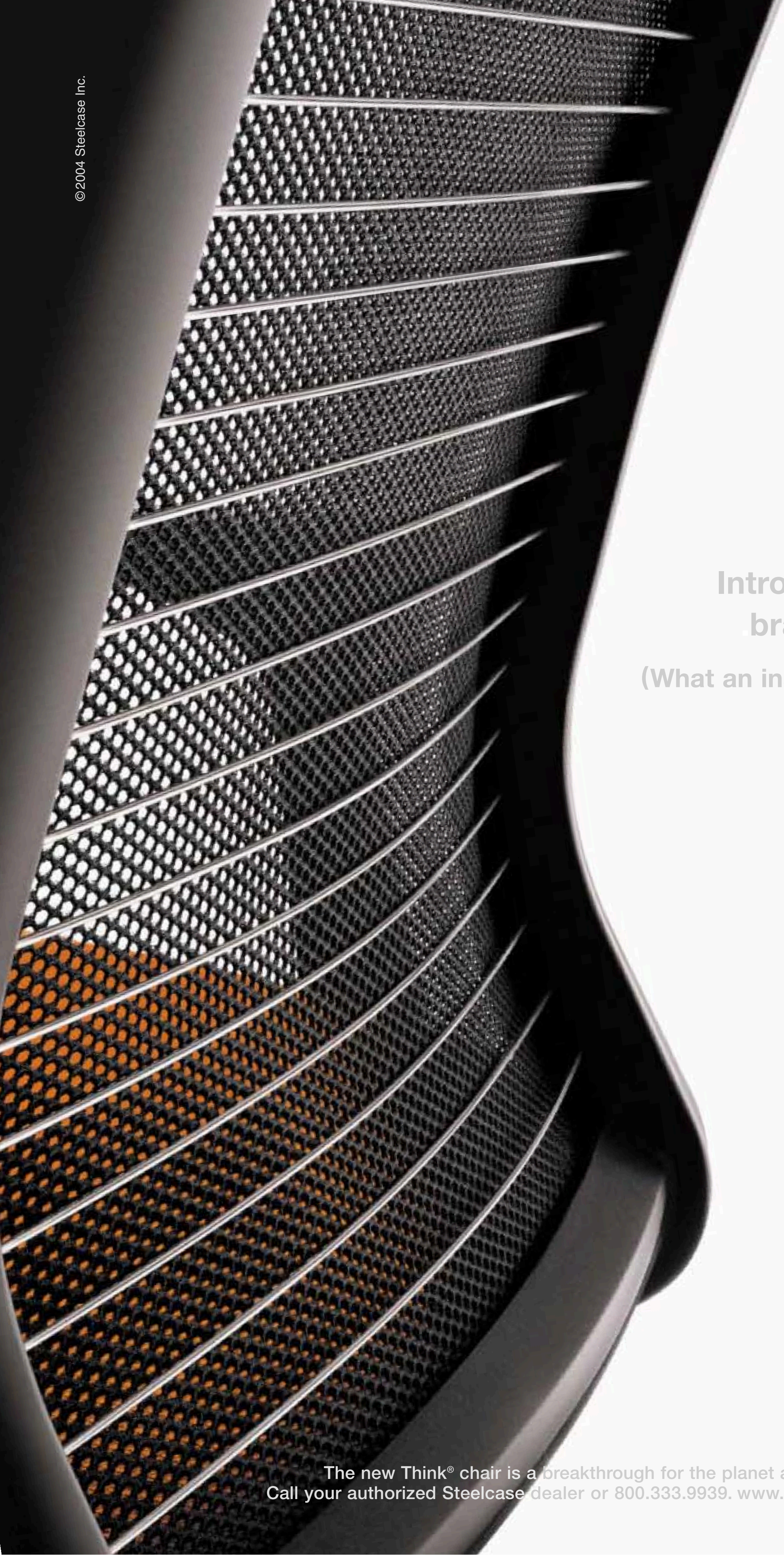
Architects also worry that the legislation's "grandfathering" clauses, which grant title status to those who have practiced for specific amounts of time, regardless of exam results, may certify individuals without proper training. Finally, Arsenault says a number of firms are worried about interior designers "diluting" their field, taking away certain roles or even entire projects.

Baltimore responds that "grandfathering" clauses for architects were much more lenient when architecture was developing in the early 20th century. Meanwhile, she says that title acts don't always follow practice acts, most interior designers have no interest in performing duties outside of their domain, and practice acts would increase clients' security by imposing standardized punishment against professionals who overstepped their bounds.

"I think their fears are not warranted," Baltimore sums up. "I think in the collaborative world of the future, it would behoove everyone to work together as a team and do the best that they can for the clients." *S.L.*

Construction numbers improve in first half of 2004

The construction industry continued its strong performance during the first half of 2004. New construction starts as reported by McGraw-Hill Construction Dodge advanced 10 percent compared to the same period a year ago. Much of the upward push came from single-family housing, which advanced 21 percent in dollar terms and continues to be the mainstay for the construction industry. Nonresidential building was down 1 percent from a year ago, but patterns suggest that it is beginning to turn the corner. Hotel construction was up 8 percent, while store construction stayed steady in the first half, maintaining improved levels established by the growing volume of outdoor mall and "lifestyle center" projects. Office construction was down 5 percent in the first half, but this was a much gentler decline than during the prior three years. Its lengthy decline finally appears to be reaching an end, and it is expected that 2004 will see modest growth. School construction continues to slip back, retreating 4 percent in the first half of 2004, affected especially by the weak (but slowly improving) fiscal position of states and local governments. First half 2004 also featured these gains: churches, up 1 percent; public buildings, up 7 percent; health-care facilities, up 8 percent; and social/recreational facilities, up 16 percent. ***Robert Murray, Chief Economist, McGraw-Hill Construction***



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New Miami living: Apartments mimic boutique hotels

Call it Manhattan South. Clusters of residential towers are rising up to fill in Miami's snaggle-toothed skyline. But these luxury condominiums more closely resemble full-service boutique hotels than domestic dwellings. Projects like Ten Museum Park, Bellini Bal Harbor, Cabana, and a host of others feature metropolitan amenities like valet service, spa service, and state-of-the-art technologies in the comfort of your own condo.

"Hotels have always tried to mimic high-end residences," says Daun St. Amand, an architect with RTKL Associates. "Now residences are trying to mimic high-end hotels. Condominium developers keep upping the ante on residential amenities."

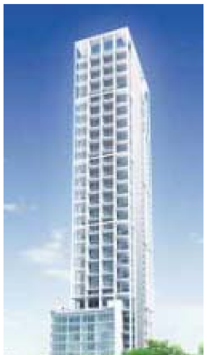
Apartment towers with beauty salons, scaled-down grocery stores, and concierge services offer time-saving conveniences often found only in hotels. Condo owners, who run the gamut from successful young executives to wealthy empty nesters, subscribe to the theory that time is money and convenience is worth the cost.

In designing the structures, Miami architects are taking a page out of the design books of popular area boutique hotels like the Mandarin Oriental Miami, a slim, 20-story hotel with a curved face and Asian theme; Lowes Miami Beach Hotel, an 18-floor building with a modern Art Deco flare; and the 31-story Trump Sonesta Beach Resort, with its stunning use of exterior glass and staggered building structure.

The Cabana: apartment building or boutique hotel?

While boutique apartment towers are springing up in New York, Atlanta, Dallas, and Las Vegas, observers point to Miami as the mother of the trend, which was born of necessity: A state-drawn boundary line to protect the Everglades National Park has halted western growth. And the ocean, bay, and rivers crossing through Dade County limit available land. The only place to go, says Charles Sieger, FAIA, principal of Sieger Suarez Architectural Partnership, is up. Sieger's firm has designed skyscraper residential properties like Portofino Tower, the Trump Ocean Grande, and now the Cabana, a 10-story private beach retreat on the Atlantic Ocean.

Cabana features 210 luxury studios appointed with items like plasma screen TVs, surround sound, SmartBox technology (controlling lighting, temperature, and other functions), and fine furnishings. The building also offers a restaurant, a spa, and an infinity edge oceanfront pool. "In Manhattan you can enjoy plenty of amenities, but you have to leave your building and walk to them," Sieger says. "In Miami's suburban structure, once you leave your building, you have to drive. Having the amenities encased on the property is more convenient." Just up Ocean Drive a few miles, Bellini Bal Harbor, a 24-story boutique condo has only four residences on each floor. Amenities include a 24-hour concierge, valet, heated oceanfront pool, a spa, fitness and beauty centers, and a café.



Contemporary rooms and furniture at Ten Museum Park (above) mimic hotels lining Miami's South Beach.

Architect Chad Oppenheim, AIA, says it's all about the lifestyle. The design of his 50-story Ten Museum Park plays off Miami's tropical climate and provides a splash of European flavor. The 50-story tower features on-site a Clinique La Prairie of Montreux, Switzerland, a wellness center, high-tech fitness equipment, and two skygardens.

"Miami is the zenith for residential lifestyle experiences as developers work to differentiate themselves with cutting-edge design, creative amenities, and hype, hype, hype," Oppenheim says. *Jennifer LeClaire*

IMAGES: COURTESY CABANA (TOP); TEN MUSEUM PARK (BOTTOM TWO)

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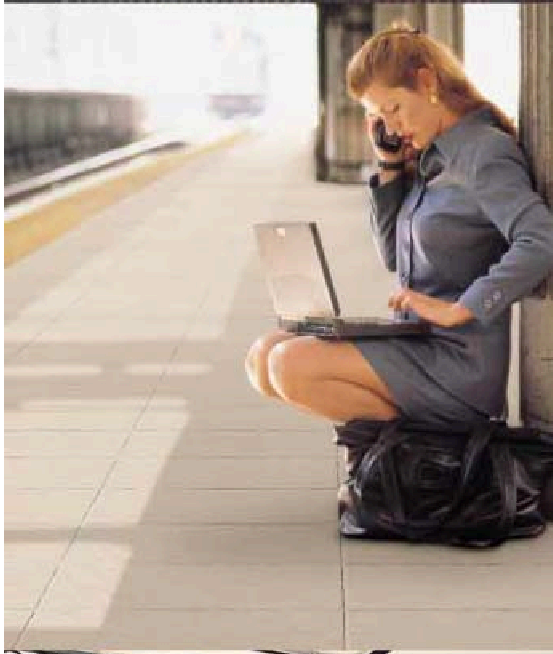

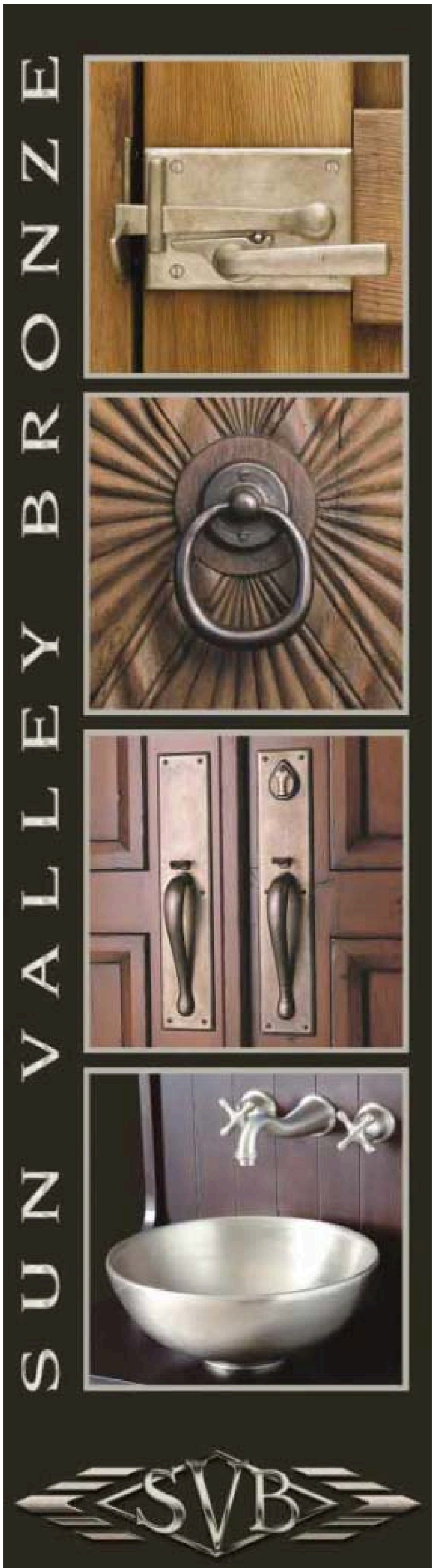

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Report cites poor management at Scottish Parliament project

Miralles's structure from above.

Inappropriate management and change orders at Scotland's new parliament project in Edinburgh, scheduled for completion in about three months, contributed to a 20-month delay and a 122 percent cost hike, according to a recent report by the Scottish auditor general.

Planned by the U.K. government, the 350,000 square feet of offices and chambers are spread in linked, four-to-six-story buildings with a dominant boat shape and stainless-steel roofs. In 1998, the target cost was $100 million-plus, and the summer of 2001 was the target completion date.

Early cost hikes and delays followed big square-footage increases as the building's use became better defined. Since mid-2000, a year after construction began, the scope of work has remained largely unchanged, notes Robert Black, the auditor general. Yet cost estimates rose from $260 million to $570 million as design continued.

"Design development became a process of [measuring the cost of] a developing design rather than developing the design within a cost," notes the auditor. In 1998, the government hired a joint-venture architect, EMBT Arquitectes, Barcelona, and the local RMJM. The flamboyant design was credited largely to EMBT's charismatic principal Enric Miralles, who died four years ago. In 1999, the parliament hired Bovis Lend Lease (Scotland) as construction manager. That was a mistake, claims Black.

"Construction management is unsuited for most building projects in the public sector," he maintains, because the approach leaves the owner with almost all of the risk. As the price ballooned, cost-linked fees rose from $42 million to a forecasted $92 million, according to the auditor. Black's report is refuted by Brian Monteith, head of the parliament's audit committee. He alleges flawed analysis and factual errors. A larger report, ordered last year by the Scottish Executive, is due out in September. *Peter Reina*

Walker cleans up at ASLA awards

In mid-July, the American Society of Landscape Architects selected the winners of its annual Professional Awards. The nine-member jury selected 33 winning projects from more than 550 entries.

Copious honors went to California-based Peter Walker & Partners, whose founding principal, Peter Walker, had taken home the ASLA Medal, the Society's highest honor, in June. The firm won an Award of Honor for the Nasher Sculpture Center in Dallas, Texas (top right), a breathtaking garden that elegantly incorporates Raymund Nasher's many sculptures, a stone terrace, large trees, and reflecting pools and fountains, sited next to a pavilion by Renzo Piano. The firm also received a Merit Award for its work at the modern yet spiritual Saitama Plaza (bottom right) in Saitama, Japan. Philadelphia firm Wallace Roberts & Todd won a Prize for Analysis and Planning for the Anacostia River Parks Target Area Plan & Riverwalk Design Guidelines in Washington, D.C. The land-use plan centers around copious greenspace and developing a common formal language through unique areas. Other winners included Ken Smith Landscape Architect, New York, for the Lever House Landscape Restoration project in Manhattan, which returns crispness and clarity to the well-known urban garden. The awards will be presented during the ASLA Annual Meeting, October 29–November 2, in Salt Lake City. For the list of award winners, go to www.asla.org. *S.L.*

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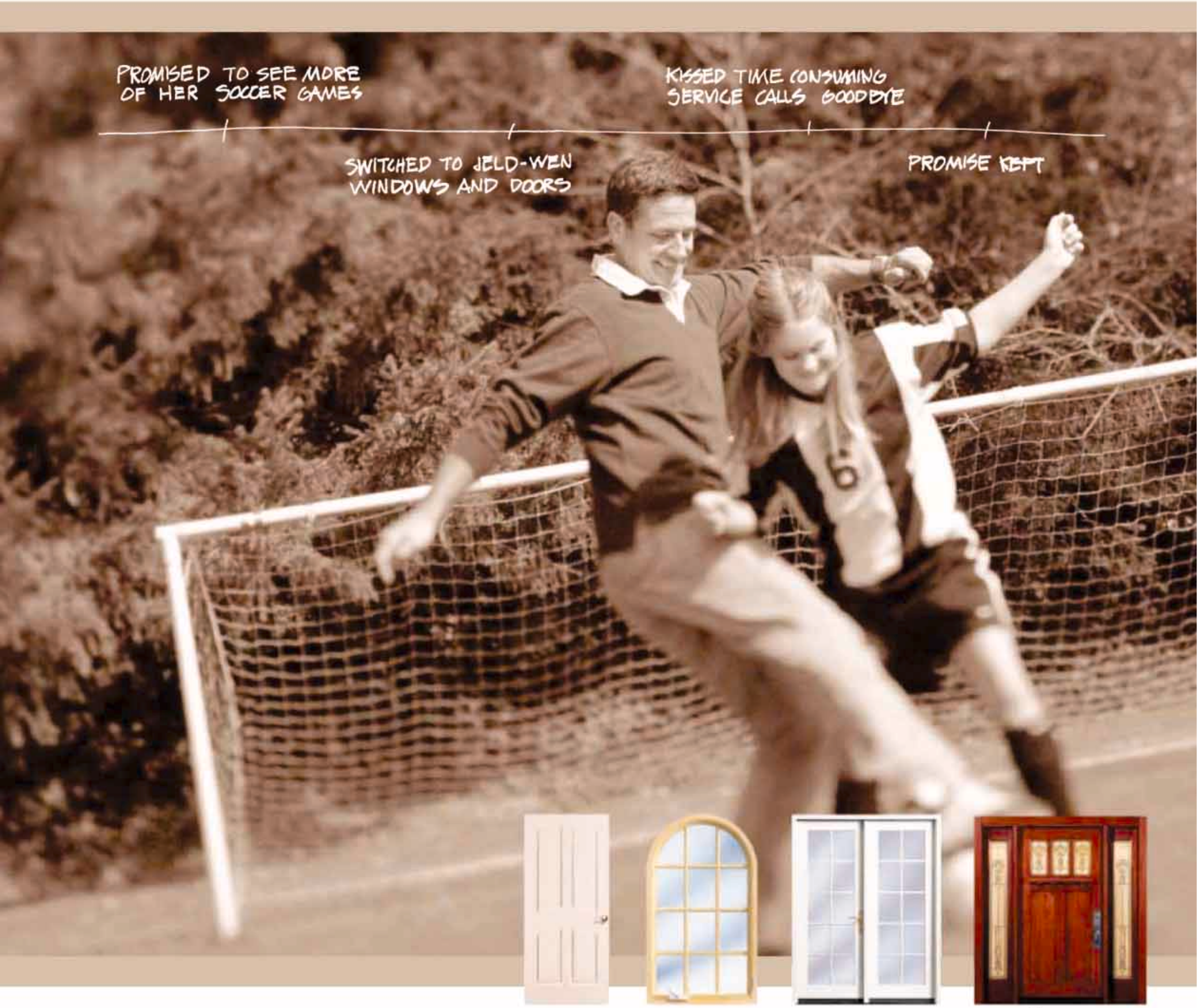
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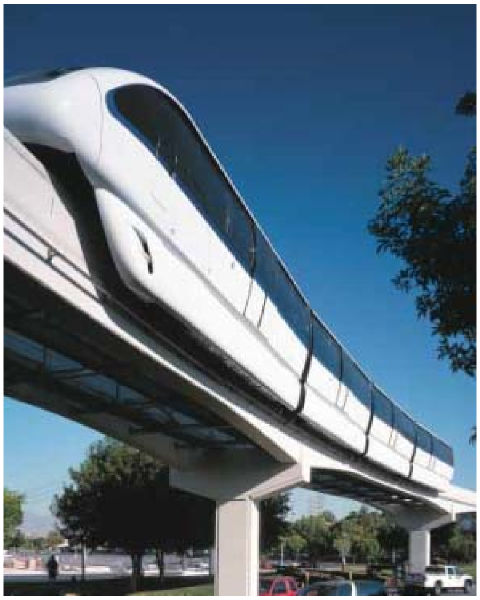
Privately funded monorail adds urbanity to Sin City

Whether your next trip to Las Vegas is to attend next year's AIA convention or to play the slots, getting around will be easier with the opening of the new, privately developed Las Vegas Monorail. The 4-mile line connects the Las Vegas convention center with more than 25 casinos along the Vegas Strip.

The $650 million line was entirely privately financed. "Two major resort companies wanted to increase mobility along the corridor," says Jim Gibson, C.E.O. of the Las Vegas Monorail, a private, nonprofit corporation. "That's what really got the ball rolling."

The speedy line, which opened on July 15, takes 14 minutes to go from end to end. Las Vegas, like Houston, which recently christened a new light-rail line, is not a city traditionally associated with transit, but as it has boomed, so have big-city problems like air pollution and traffic. Gibson sees the monorail as part of a larger regional transportation system that will eventually include light-rail lines to outlying areas for commuters. Two extensions are already in the works—the first, to Freemont Street in the downtown area, and the second, to the airport—though both pieces will involve both public and private funds.

Still, economics have been the driving force behind this first segment. "There has been tremendous interest in the opening of the line from convention promoters," Gibson says. And if the technology makes you think of Disney World, you're onto something. "It's the same technology," Gibson says, "and most people have a very positive impression of this kind of transit because of Disney World."



The public monorail was funded by private sources.

Gensler designed the system's seven stations in a simple palette of glass, steel, and concrete. "The stations are a family; each one is different but comes from the same kit of parts," says J.F. Finn, the project's lead designer. "We resisted engaging with the iconography of the city; instead, we want the system to be the thread that connects the city's icons." Built over the parking lots, alleys, and streets behind the resort properties, investors hope the line will encourage development in these previously underused areas while preserving the sight lines and spectacles of the Strip. *Alan G. Brake*

Architects (and their money) to the rescue at Venice Biennale

While the U.S. Pavilion at the 2005 Venice Art Biennale faces funding problems, this year's U.S. Pavilion at the Architecture Biennale will launch on September 12, thanks to an extra helping hand from an unusual source: architects. A number of established firms have pitched in up to $10,000 each to supplement corporate sponsorships and ensure that the U.S. Pavilion's exhibition, *Transcending Type*, which features vanguard firms creating new forms for traditional American building types, moves forward. Contributing firms include Beyer Blinder Belle, Fox & Fowle, Gensler, Kaplan McLaughlin Diaz, Kohn Pedersen Fox, Murphy/Jahn, Pei Cobb Freed & Partners, Cesar Pelli & Associates, Perkins Eastman Architects, and NBBJ. "This mentoring idea was really a stroke of genius," says Brian Sexton, State Department Special Coordinator for Culture, who admires the architects' camaraderie. Next year's art pavilion was hurt when the Pew Charitable Trusts and Rockefeller Foundation discontinued funding (about $300,000) this winter, and the National Endowment for the Arts recently abandoned its role in artist selection. The State Department is now soliciting curators, who will have to raise funds to supplement the government's $170,000 contribution. The show will still go on, says Sexton, and a team will likely be chosen by the end of the summer. *S.L.*

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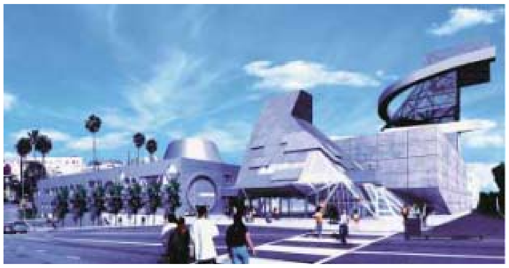
Record News On the Boards: Schools

U.S. school design remains woefully inadequate, and trends point to more utilitarian, boxy megastructures and unimaginative floor plans. Yet some architects are planning spaces that combine new ideas with sophisticated form and layout while heeding the need to foster student learning and well-being. Some schools act as community centers and others teach lessons through their form. School design competitions are helping the cause. While most municipalities rely on clandestine measures like RFP's to pick designs, competitions encourage community input and stimulate new ideas from a wide range of talent. S.L.



Not your father's high school: Coop Himmelb(l)au in L.A.

Grand Avenue—Los Angeles's designated "cultural corridor"—is poised for its next leap forward after Disney Hall with the impending new High School for the Visual and Performing Arts, or High School #9, designed by Vienna-based Coop Himmelb(l)au. The $71 million project, expected to serve 1,500 students, will form the capstone at the northern end of the avenue. The school is comprised of four distinct academies—music, dance, visual art, and theater. Each academy has a building dedicated to its use, with studios and regular classrooms sharing space. A fifth building, the gymnasium, completes the campus perimeter, while the library, in the form of a canted, truncated cone, rises symbolically at the campus center.

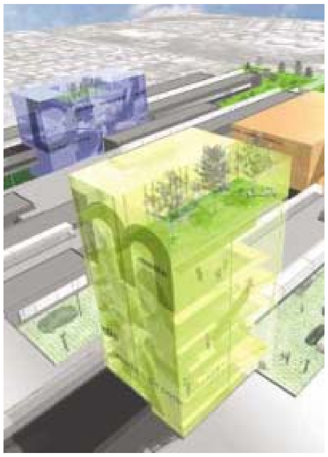
The Grand Avenue facade contains a large outdoor plaza and staircase that is the so-called "Public Entrance" to the campus. To the right of the entrance is a glass-and-steel lobby leading to a theater topped by a tall tower. An extension of the 1,000-seat theater's fly loft, the tower is encircled by a spiral ramp and topped by a 3,500-square-foot exhibition/conference space. The firm expects ground breaking to occur by the end of 2004, with first classes to be held in September 2006. *David Maurer*

Ronan's design will alter a town, not just a school

In an architectural "upset," Chicago-based John Ronan, AIA, recently defeated entrants like Peter Eisenman, FAIA, and Thom Mayne, AIA, to win a two-stage competition to design a striking new high school in Perth Amboy, New Jersey.

The resulting 471,436-square-foot complex will be a "hybrid" institution, functioning as both a school and a civic cultural center. The design includes a "mat," the natural and constructed landscape; a "barscape," made up of long, interconnected, rectilinear volumes housing the academic programs; and glass "towers," which rise above the site and host communal programs such as an auditorium, a media center, and dining facilities. The colorful towers are glazed in patterned and tinted layers, identifying the activities contained within and serving as visual links to the community.

The $84 million school's design, says Ronan, focuses not only on visual drama, new materials, lightness, and flexibility, but on effective learning. Small, expandable spaces known as "bars" act as intimate common areas for interaction, while classrooms draw maximum daylight and ventilation through large, operable windows on two sides. The towers will serve, Ronan points out, as a visual beacon to encourage community interaction. "This is the center of the community for this town," says Ronan.



The total complex will accommodate 3,000 students on a 15-acre site. Jury members included Henry Cobb, FAIA, Carlos Jimenez, and Toshiko Mori. Meanwhile, the New Jersey Department of Education is organizing another open competition for the renovation and expansion of the Robbins Elementary School in Trenton, New Jersey. The competition will be launched in September. *S.L.*

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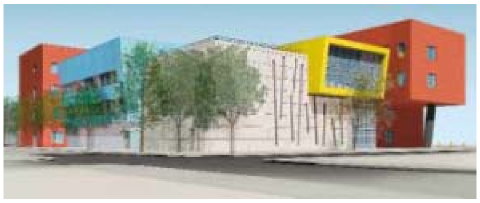
Arquitectonica's school is a learning tool in itself



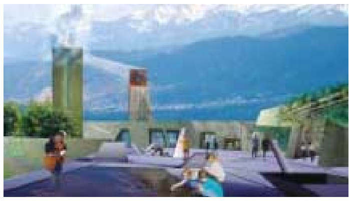
Miami-based Arquitectonica is designing a High School for Architecture and Urban Planning in Ozone Park, Queens, New York.

The unique design of the $70 million, 155,000-square-foot campus demonstrates the firm's trademark flair for pastel colors and nonlinear forms, but it also serves, notes firm principal Bernardo Fort-Brescia, FAIA, as a learning model in itself. For instance, facade materials indicate internal functions. The classroom wing is designed with traditional brick, while other areas are far less orthodox: The library is covered with flat metal, the design studios are clad with corrugated metal, and the gymnasium is covered with glass block.

Testing the boundaries of New York's Department of Education's strict design rules, the firm took some liberties. To circumvent minimal lobby space allocation, the firm combined the jury room and the lobby into an open, light-filled area. The courtyard became an extension of the design studios, combining interior and exterior spaces.

The school will be the first constructed under New York's new school construction process, which merges the School Construction Authority into the Department of Education. *S.L.*

Predock's "Science Canyon" embraces local land forms

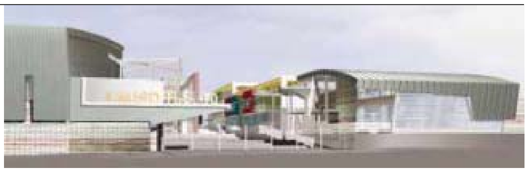


Albuquerque-based Antoine Predock, FAIA, recently won a competition for the design of a new K-12 school in Colorado Springs. "Science Canyon," as Predock calls the project, proposes a "site of learning," where hands-on observatories and mathematical and scientific references emerge at many levels.

Located in the state's high plains, siting and topography were of utmost importance to the design. "The scheme represents a journey from the high mesa of the site to a wetland at the other end. This journey takes students, staff, and visitors from the theater, gymnasium, and administrative offices on the south of the site to an amphitheater and playing fields to the east, past gardens, a fish hatchery, and a riparian habitat to the west. "As [they] travel through Science Canyon," Predock explains, "science lessons turn up at every corner. They are even embedded in the walls: The Fibonacci number series defines the [tile] pattern in one plaza."

Building materials include concrete masonry, metal, and glass, designed and oriented to respond to seasonal climates. Courtyards are planted with deciduous trees, and in the "Ice Court," students will measure snow accumulation and study drift patterns. Completion is scheduled for June 2007. *Audrey Beaton*

Johnson Fain blurs inside and outside



Johnson Fain and Partners is designing the Central Los Angeles Area High School #10, located on a 20-acre site in the Crown Hill District, outside they city's downtown.

The 231,000-square-foot school, arranged in a quadrangle plan, is intended to accommodate 1,700 students. The firm divided the large site into two pieces on either side of 3rd Street. An auditorium, cafeteria, and administration building open onto a "town square," or outdoor meeting space, while classroom wings and a library extend into a landscaped academic garden. A sleek steel pedestrian bridge connects the two campuses.

All corridors are open-air, and mechanical and electrical systems are exposed. Scott Johnson, FAIA, explains that the buildings, made mostly of metal panels and poured-in-place concrete, form an "urban wall," providing security and intimacy. The school is part of a state initiative that includes the construction of 55 schools. It is scheduled for completion in September 2005. *A.B.*

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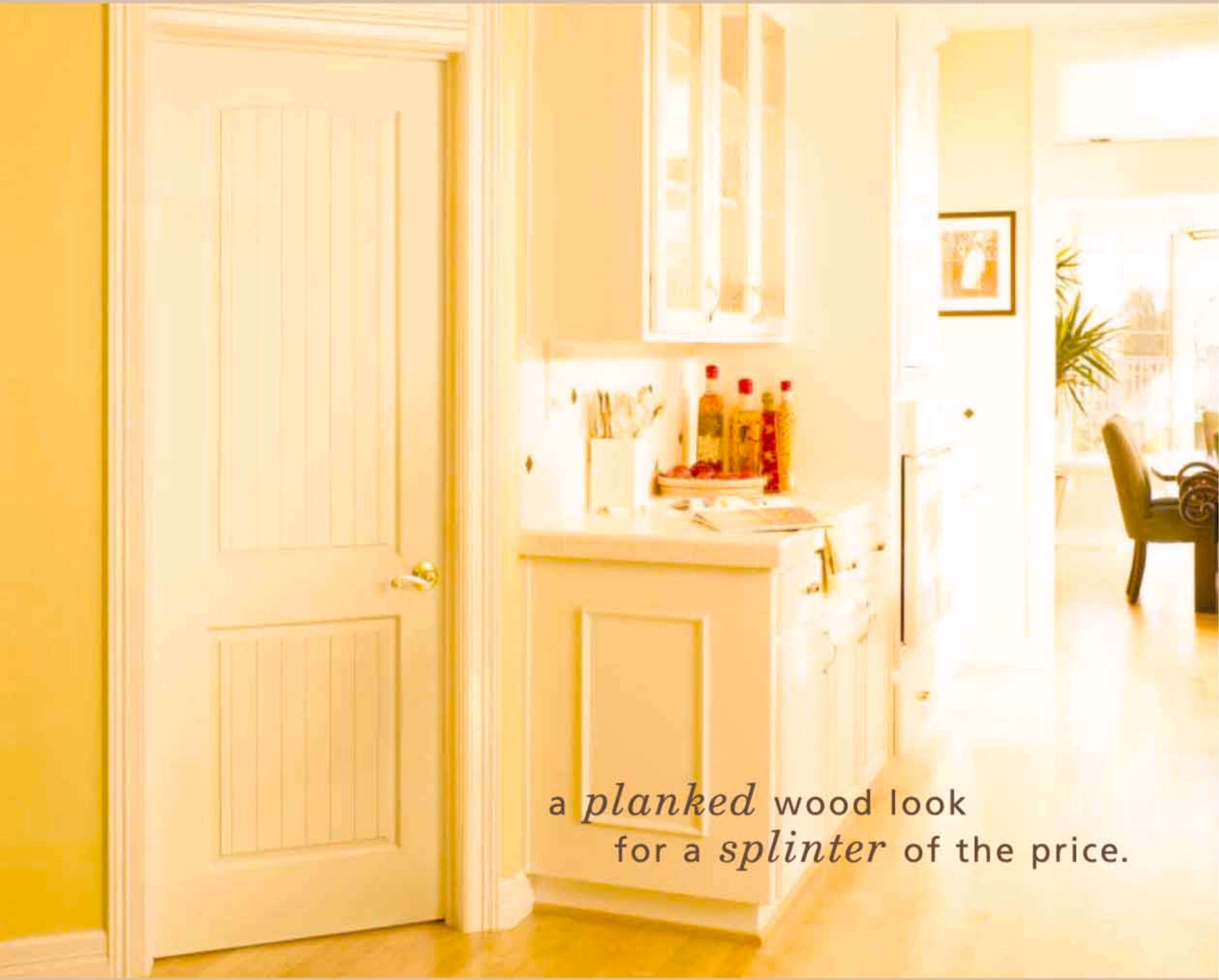

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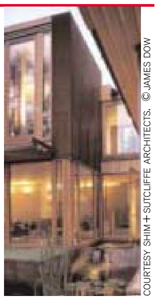
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September 7
The Rebuilding of Lower Manhattan
Paul Goldberger, dean of the Parsons School of Design, architecture critic for *The New Yorker*

September 9
Shim + Sutcliffe Architects
Brigitte Shim, partner of Shim + Sutcliffe Architects, Toronto

September 27
Henry C. Turner Prize
Charles A. DeBenedittis, senior managing director of design and construction at Tishman Speyer Properties

September 28
The Cost and Financial Benefits of Green Buildings
Greg Kats, principal of Capital E Group

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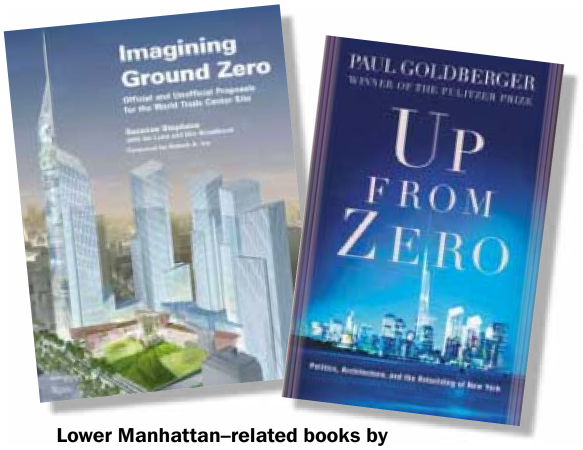
News Briefs

Parade of Ground Zero books begins marching Three years seems to be just enough time to begin publishing comprehensive books on the architectural plans at Ground Zero. Among the first are ARCHITECTURAL RECORD and Rizzoli's *Imagining Ground Zero: Official and Unofficial Proposals for the World Trade Center Site* and Paul Goldberger's *Up From Zero: Politics, Architecture, and the Rebuilding of New York*, both to be released in September. RECORD's book, edited by Suzanne Stephens, is dominated by visually rich renderings of what could and would be downtown. It includes a forward by RECORD editor in chief Robert Ivy, FAIA. Goldberger's, published by Penguin, looks critically at the political and artistic machinations that have affected the newest evolution of Lower Manhattan. Meanwhile, Daniel Libeskind's autobiography, called *Breaking Ground: Adventures in Life and Architecture*, which includes a hefty section about the Trade Center, will arrive on November 4, in time for Christmas shopping season. *S.L.*

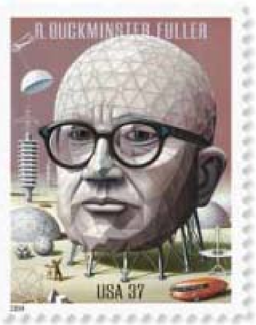


Lower Manhattan–related books by RECORD (left) and Goldberger (right).

Hardy Holzman Pfeiffer splitting into three firms The founding partners of Hardy Holzman Pfeiffer Associates (HHPA) disbanded effective August 1. The 37-year-old New York architecture firm is responsible for renovating Radio City Music Hall and the Brooklyn Academy of Music's Majestic Theater as well as designing the Cleveland Public Library and the Los Angeles County Museum of Art. The principals, Hugh Hardy, FAIA, Malcolm Holzman, FAIA, and Norman Pfeiffer, FAIA, are forming three independent organizations, each continuing to work with its base of national and international clients. H3 Hardy Collaboration, headed by Hugh Hardy, will remain in HHPA's current Manhattan offices at 902 Broadway. Malcolm Holzman will join with partner Douglas Moss to form Holzman Moss Architecture, with offices on West 29 Street in New York. Pfeiffer, with HHPA partners Stephen Johnson and Jean Marie Gath, will remain in Los Angeles under the name Pfeiffer Partners. Each of the new firms will retain its designated HHPA core staff. *T.I.*

Syracuse to offer country's first accredited arts journalism program Syracuse University is establishing the country's first accredited master's-level arts journalism program. The Goldring Arts Journalism Program, named after Syracuse trustees Lola and Allen Goldring, will begin in July 2005. It will be administered by the S.I. Newhouse School of Public Communications in collaboration with the College of Arts and Sciences, the College of Performing and Visual Arts, and the School of Architecture. While a few cultural reporting programs do exist, like the USC Annenberg Getty Arts Journalism program and the National Arts Journalism program at Columbia University, this will be the first time an accredited university will grant a degree in arts journalism. Applications for the program are due by February 1, 2005. *S.L.*

Buckminster Fuller honored with stamp The U.S. Postal Service has immortalized one of architecture's most creative thinkers, R. Buckminster Fuller, with his own stamp. The stamp's image reproduces an unusual painting of Fuller by Boris Artzybasheff that originally appeared on the cover of *Time* magazine in 1964. It depicts Fuller's head inscribed with the pattern of his best-known invention, the famous geodesic dome, patented in 1954. The playful graphic also illustrates several other objects conceived by the visionary architect, including the Dymaxion Car, a three-wheeled automobile; the 4D Apartment House; and elements reflecting the geometric and structural principles Fuller discovered. The postal service has released 60 million of the 37-cent stamps, which were officially issued at a ceremony on July 12. They can be purchased online at www.usps.com/shop. *S.L.*



A stamp gives Fuller a big, geodesic head (above).

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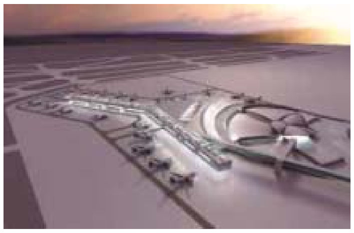
News Briefs

New JetBlue terminal in New York After years of negotiation, JetBlue Airlines has developed a scheme with the Port Authority of New York and New Jersey for a new terminal at JFK Airport in New York City. The sleek, 625,000-square-foot structure, designed by Gensler, will include 26 gates and is expected to accommodate about 20 million passengers a year. It will sit next to Eero Saarinen's famous TWA terminal, whose future program, Gensler officials say, is still undetermined (although a renovation is scheduled shortly).



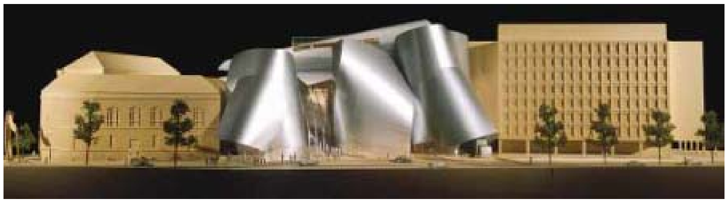
JetBlue's new terminal will surround Eero Saarinen's TWA.

The two terminals will be connected via pedestrian tubes. The new JetBlue facility will feature a trim, contemporary profile of taut metal and glass that is intended to keep a low profile next to the Saarinen building, which is regarded as a classic of Modern architecture. Constructed between 1956 and 1962, the TWA building features soaring, severely curved concrete wings that make it reminiscent of a bird in flight. The Port Authority had originally planned for TWA to fall out of use before vociferous protests from local groups helped lead it toward a different destiny. Construction is set to begin this fall, and opening is scheduled for 2008. *S.L.*

Architecture for Humanity launches newest competition
On July 1, New York–based nonprofit Architecture for Humanity (www.architectureforhumanity.org) announced "Siyathemba" (the Zulu word for hope), a design competition for a soccer field to be built in 2005 in Somkhele, South Africa, an area that has one of the highest AIDS infection rates in the world. The facility will serve as a gathering place and AIDS education center for young people ages 9 to 14, and will serve as headquarters for the area's first-ever girls' soccer league. Local medical professionals from the Africa Center for Health and Population Studies will staff the center.

Participants are required to use sustainable and local building materials, and the facility must be able to be constructed, using local labor, for no more than $5,000. Participants must submit materials no later than October 15, 2004. The winner will be announced on World AIDS Day—December 1, 2004—in New York City. Architecture for Humanity is also organizing a traveling exhibition of select entries that will open in New York after the winner is named. *Deborah Snoonian, P.E.*

Gehry's Corcoran addition gets substantial financing
City officials voted to authorize $40 million in tax increments to help finance a Frank Gehry–designed renovation and expansion of the Corcoran Gallery of Art in Washington, D.C. The Corcoran's fund-raising campaign has now reached $106 million, and ground breaking should occur in 2006, says trustee and campaign cochair John "Til" Hazel. *T.I.*



Gehry's Corcoran Museum addition (above) gets help from Washington, D.C.

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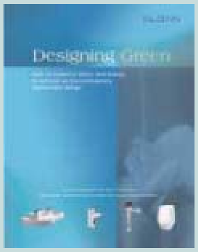

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REBUILDING LOWER MANHATTAN

Ground Zero—three years later

It has now been three years since the most devastating attack ever on U.S. soil, and just as shattered psyches and lives are beginning to reveal the slightest signs of healing, so too has the rebuilding process at Ground Zero begun to show incipient marks of progress.

In the following special section, ARCHITECTURAL RECORD *will explore the results of an extensive planning and rebuilding process that began just after the September 11 attacks. While the rebuilding is far from complete and faces major hurdles and criticisms (see pages 48 and 50), significant progress has been made. Designs for the majority of the area's components have been approved. S.L.*

The Lower Manhattan Development Corporation's (LMDC) choice of Studio Daniel Libeskind as winner of its "Innovative Design Study for the Master Plan" in February 2003 was the first major step in the World Trade Center site design process. The team's plan embraced the street grid and had open plazas, sloping roofs, and twisted geometries; it included a sunken memorial, a museum, a descending spiral of office buildings, cultural facilities, and a transit hub.

The initial design for the 1,776-foot Freedom Tower, designed by David Childs, FAIA, of Skidmore Owings & Merrill (SOM) with consulting by Studio Daniel Libeskind, was unveiled in December 2003. The glass-and-steel tower will adhere to the asymmetrical street grid, torquing as it progresses in height. It will contain 2.6 million square feet of office space, with its upper portion a lattice-work structure of tension cables and wind turbines. The tower will be topped by a 276-foot spire, sitting off-center to echo the upraised arm of the Statue of Liberty nearby. Completion is scheduled for 2008.

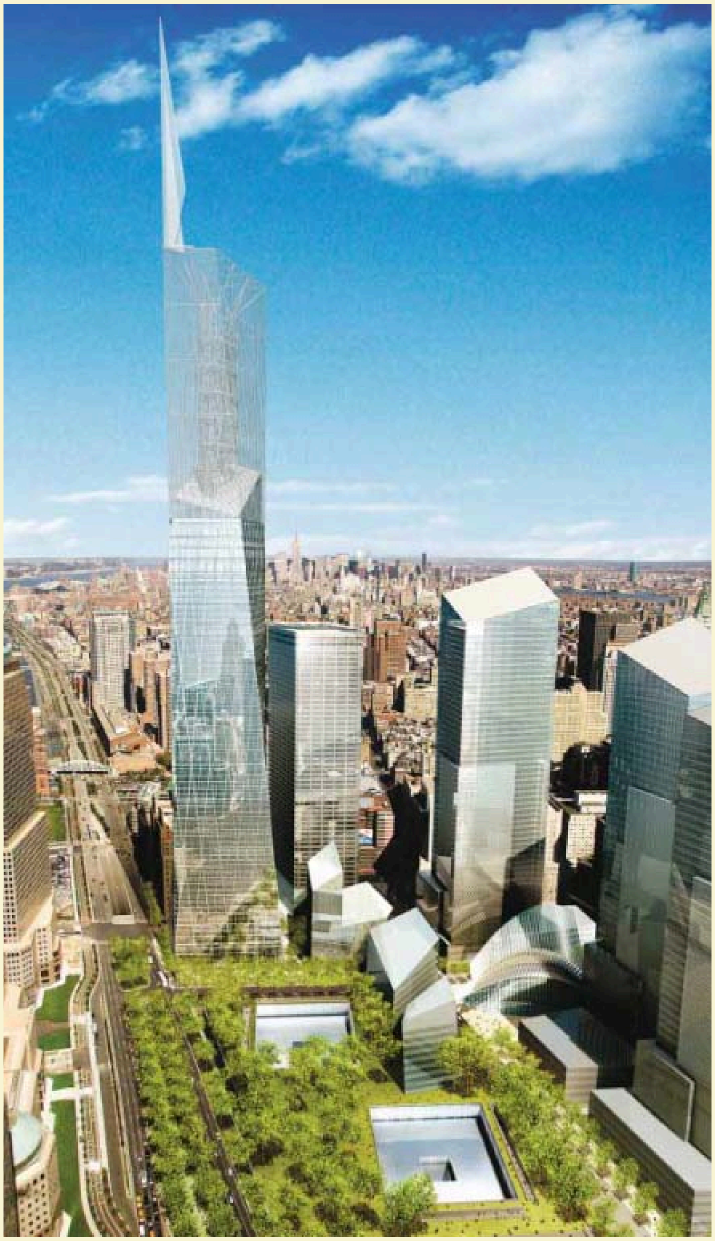
A temporary transportation station, designed by former Port Authority architect Robert Davidson, FAIA, was completed in November 2003. It sits at the northeast corner of the site, shuttling passengers out of the heart of what was recently a demolition zone. The $224 million structure has three levels and a canopied steel entrance.

Relatively unknown architect Michael Arad, now a partner at New York–based Handel Architects, won the memorial competition this January, beating out 5,200 other entries with his proposal "Reflecting Absence." The scheme uses the Twin Towers' footprints as sites for two sunken reflecting pools, and includes a large landscaped park. A memorial museum and a space for unidentified victims' remains will reside below, accessible via ramps that pass the slurry walls of the original towers. Arad will work with California landscape architect Peter Walker and New York firm Davis Brody Bond.

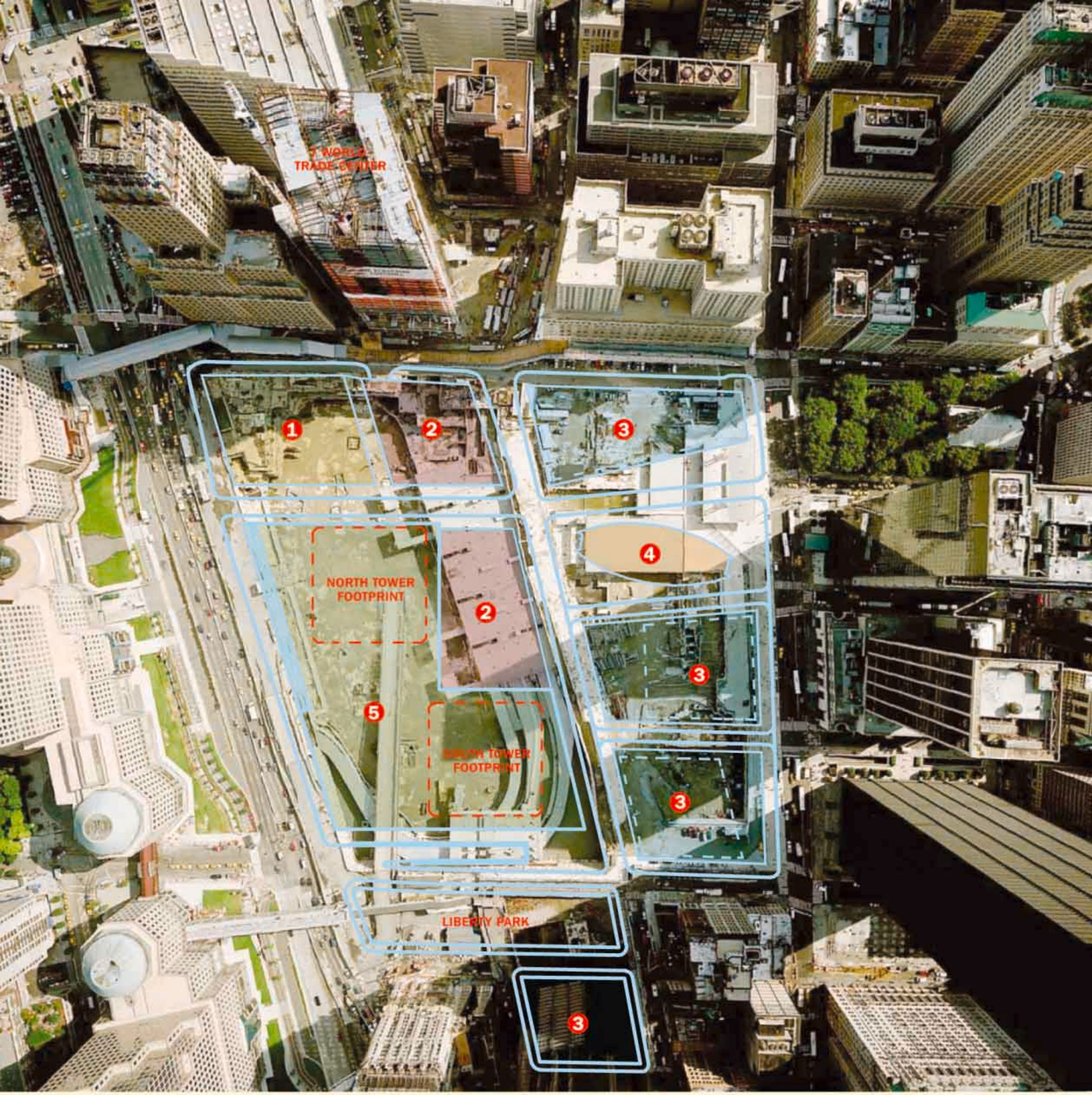
Santiago Calatrava's $2 billion, 200,000-square-foot, 5-level transportation hub, slated for a 2009 completion, will stand at the northeast corner of the site, situated in its own plaza. The ovular glass-and-steel structure will greet travelers at street level with a winglike, movable roof jutting 168 feet into the air. Train platforms and shops will be underground.

The LMDC has solicited design proposals, due September 1, for arts buildings to house the Joyce and Signature Theaters, as well as venues like the Drawing Center and future Freedom Center. In late September 2003, developer Larry Silverstein selected Fumihiko Maki, Norman Foster, and Jean Nouvel to design office towers, but preliminary designs have not been completed. *S.L.*

A recent rendering (below) shows the crystalline Freedom Tower, four other office buildings, a transit hub, and a large memorial and park. Office towers and cultural buildings are yet to be designed.



IMAGES: COURTESY DBOX/LMDC (RIGHT); PORT AUTHORITY OF NEW YORK AND NEW JERSEY (OPPOSITE)

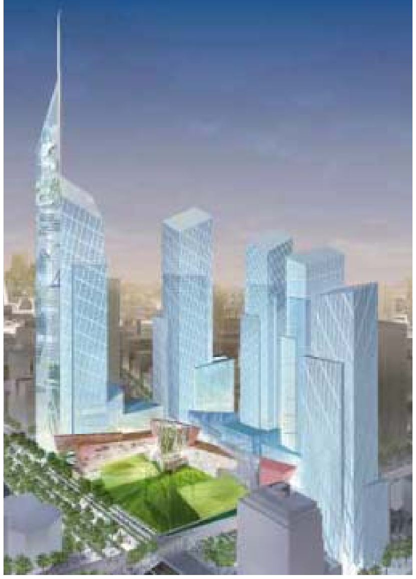

7 WORLD TRADE CENTER
1
2
3
NORTH TOWER FOOTPRINT
4
2
3
5
SOUTH TOWER FOOTPRINT
3
LIBERTY PARK
3

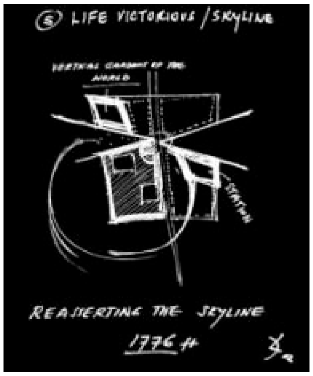
Ground Zero seen from above

1. Freedom Tower. Skidmore, Owings & Merrill
2. Performing arts (top) and cultural buildings
3. Office towers. Jean Nouvel, Fumihiko Maki, Norman Foster
4. Transportation hub. Santiago Calatrava
5. World Trade Center Memorial. Michael Arad

REBUILDING LOWER MANHATTAN

Ground Zero—three years later: Architects weigh in





A rendering of Libeskind's plan (left), and one of his early sketches (below).

Reaction to the selected World Trade Center schemes has been mixed among architects, over 30 of whom were informally surveyed by ARCHITECTURAL RECORD. Comments reveal the projects' strengths and potential gaps, and reflect more than anything a desire to seek fresher, more emotionally relevant, and more unified ideas for Lower Manhattan.

Most respondents seemed annoyed that their colleague Daniel Libeskind, who won the LMDC's "Innovative Design Study for the Master Plan" in February 2003, appears to have been excluded from much of the subsequent design process. "The competition winning scheme was not respected," notes New York architect Steven Holl, whose team's scheme for the Trade Center was one of the finalists in the design study competition. ***"What has occurred is the result of a faulty competition, further compromised by the developers' maneuvers."*** New York–based Henry Smith-Miller adds, ***"Libeskind's provocative vision seems to have faded."***

While Libeskind and the LMDC maintain that his master plan is intact, and that the original competition was about "ideas," not concrete designs, New York–based Billie Tsien, the only architect on the original LMDC board, believes Libeskind must be disappointed to have played such a small role in the design process. ***"Anyone who has done a master plan wants to build some of the buildings."*** The competition's results may always be contested. The winner's role was never clearly defined, while the LMDC did little to correct any mistaken impressions. "The process was extremely unclear," says Margaret Helfand, FAIA, organizer of New York/New Visions, a coalition of architects and urban planners that has carefully critiqued designs downtown. "A lot of us were seduced into thinking it was for more than just a master plan."

Nevertheless, Tsien, like others, maintains that having Libeskind as the only designer may not have been effective. "I'm not sure that having the hand of Libeskind throughout would have been right in the end. It's not always best to have everything designed from one perspective."

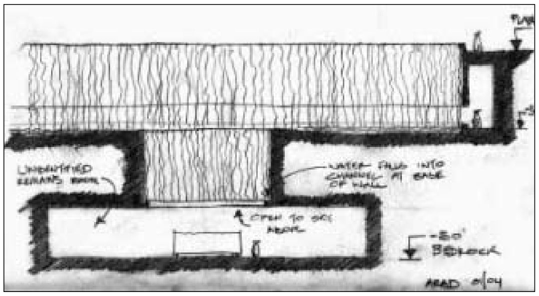
The scheme itself and the resulting pieces—the Freedom Tower, the memorial, the transit hub, and so on—have provoked steady debate with each design unveiling. First, the individual elements: Many jabs have been aimed at the Freedom Tower's top spire, which appears to its critics to be out of proportion with the rest of the building, while many find it lacks a powerful sense of symbolism and doesn't properly reflect the events of September 11. For many, echoing the Statue of Liberty is a weak premise. Tsien says it is ***"pretty much impossible to build a building as a symbol."*** There seems, meanwhile, to be a common feeling that the massive glass structure has a "corporate" aesthetic—perhaps, some posit, a reflection of developer Larry Silverstein's choice of SOM over Libeskind as designer. "It's just a developer's office building," notes Helfand.

The memorial's overwhelming size, notes Chicago architect Jeanne Gang, AIA, "works against the potential power of an intimate experience, and it starts to de-densify that whole section of the city." Others feel the landscape design by Peter Walker has personalized the intimidating memorial and helped mitigate its "morbidity," though some say such efforts detract from its unity and spiritual power.

Many have praised Santiago Calatrava's inspirational transit station design, but others find the sculptural work out of place on the site. "The transit center is somewhat disappointing because it is such a signature piece," says Chicago-based Carol Ross Barney, FAIA. "It's not really about New York City." Adds Helfand, "I love his buildings elsewhere, but they're not about being neighbors with anything. ***They don't knit things together; they're objects."***

And while Libeskind's plan has significant support, many criticize its overall lack of innovation, originality, and humanity. Slovenian architect Rok Oman, a member of Ofis, featured in RECORD's 2001 Vanguard issue, says that the winning schemes ***"look like any other commercial center or shopping mall around the world."*** California-based Eric Owen Moss, FAIA, points out, ***"Where is the fragility in the project? Where is the fundamental doubt?*** [Where is the reflection of] an America with a capacity to be wounded and to climb over that and acknowledge what happened? The project seems to ask for something that requires a broader vision, that acknowledges the face of history in a psychoanalytic sense."

Some respondents feel that the need to come to terms with the events of September 11 may have been better fulfilled with a louder public voice. Says Moss: "We were hoping to participate in a discussion with a lot of people, not just developers and architects. [It is important to note that the LMDC board did include family members, politicians,


UNIDENTIFIED REMAINS ROOM
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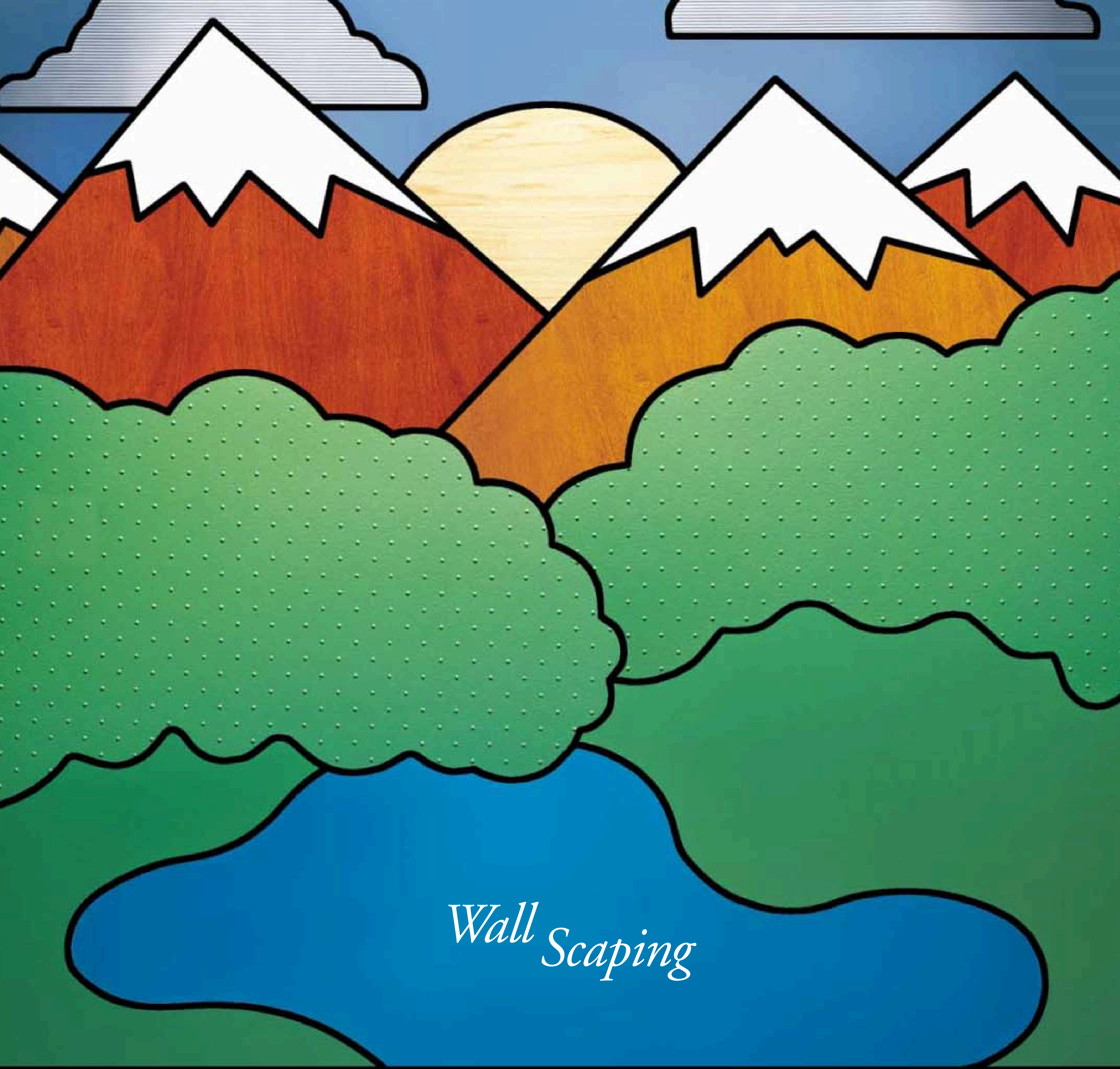
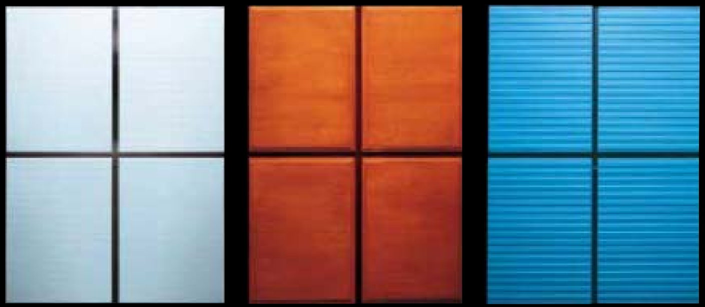
Arad's memorial now includes a park, thanks to Walker (left). An early sketch by Arad for the memorial (above).

IMAGES: COURTESY DBOX/LMDC (TOP LEFT); STUDIO DANIEL LIBESKIND (TOP RIGHT); DBOX/LMDC (BOTTOM LEFT); MICHAEL ARAD (BOTTOM RIGHT)





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REBUILDING LOWER MANHATTAN

The Freedom Tower is designed to dominate the Lower Manhattan skyline.

and businesspeople, among others.] "Who's looking after the public good?" asks Helfand, who finds most of the schemes aimed chiefly at profits.

Others point out that the project's fast pace has left little time to digest events and propose effective reflections of them and of the healing process. Ross Barney notes that more time would present "an opportunity to discuss the future of cities as well as our national psyche." And Moss adds, "I think, in a fundamental way, we need to understand whether we understand enough to know what's happened."

Others seem disturbed that the present schemes don't look to the future but rehash old themes of what a city should be. Winka Dubbeldam, a Manhattan-based architect who envisioned a scheme for Lower Manhattan in the Max Protetch Gallery show *A New World Trade Center*, says, ***"Why make the program the same as it was, rather than create an innovative part of the city? It is essential to propose new typologies for downtown Manhattan."*** She proposes horizontal office spaces (more efficient, she says) and community-centric elements like apartments, schools, hospitals, parks, and supermarkets. Many of Dubbeldam's comments stem directly from her proposal at the Protetch show, but also reflect a salient desire to rethink programming. Brendan MacFarlane, a Paris-based architect who was also in the Protetch show, had hoped this would be "a place for people about people." Instead, he says, ***"I think our profession gave the worst kind of response. We lost the opportunity to send a message about the way we want to live together in the city of the future."*** Outspoken Dutch architect Kas Oosterhuis, another Protetch participant, is disappointed with the plan's "soberness," "lack of grief," and its refusal to "change the conditions that caused the WTC attack." He adds: "The program is like any other commercial program on any other downtown site of similar importance. New York has become a symbol of a frozen city: ***The current scheme is doomed to become the symbol and living proof of the end of the American Era."***

Some feel the plan and its components are not only outdated, but don't mesh with New York City itself. Notes Japanese architect Kengo Kuma: ***"Not only does it isolate another large population in skyscrapers, its master planning isolates the entire neighborhood from being a part of the history of what had occurred."*** A considerable number of respondents favor a larger residential component, a reflection of a changing society and a desire to establish a more vital urban landscape. Israeli architect Moshe Safdie referred RECORD to an article he published in *The New Republic* calling for hotels and apartments, which would "contribute to nighttime and weekend activities, overcoming the evening and weekend abandonment from which the area suffered."

More wonder if the present components could have better formal and programmatic linkages, pointing to an overabundance of "single-minded" works, disconnected "trophy buildings," and a lack of cohesive landscape and "public realm" planning. Rick Bell, FAIA, executive director of New York's AIA chapter and a member of New York/New Visions, notes that Libeskind's design guidelines have never been released to the public and have been ***"floating around since before Thanksgiving 2003, but have not had any impact on significant structures well into development, including the Freedom Tower."*** Had the guidelines held more sway, some hypothesize, subsequent designs may have developed a more powerful common formal language. "If there's no teeth in [the guidelines], then we can't expect anything to happen," adds Helfand. Hernan Diaz-Alonso—who was part of the group organized by Herbert Muschamp of *The New York Times* in the effort dubbed "Thinking Big," to develop plans for the Trade Center—finds the results culturally vapid and "formally a disgusting pastiche."

The plans also have champions, however. Gang feels "the Freedom Tower has developed into a compelling combination of structure, services, and form. ***The form itself is very elegant and visually interesting, the way that it twists and then transforms from a solid into a much lighter structure. I think it works and it's going be a unique piece of the city."*** Helfand finds most of the Freedom Tower unmoving, but she calls the upper portions "poetic," and a "powerful gesture (although likely unrealistic). And while Gang finds the memorial oversized, she notes, "The design effectively utilizes the section to knit together the urban spaces around the site. It's still a very large memorial, but the design chosen is working to counteract that by providing multiple levels. The memorial activity is essentially separated from the park."

Smith-Miller tips his hat to smaller projects downtown that have fallen under the radar, like the rehabilitation of historic Stone Street, which he calls "a nearly perfect and accurate 'period piece' restoration"; his firm's renovation of Pier 11 on the Hudson River, which "brought the context and architectures of the waterfront into focus"; and SHoP's pedestrian bridge over West Street, which "demonstrated certain unfamiliar forms derived in their practice." These projects, he says, "offer insight into the site's real future."

But the "real" future of the Trade Center site remains fluid, not static. Neither funding, market demand, nor designs are set in stone. Thus architects have made certain things abundantly clear: It's never too late to think harder about what's happened, to better anticipate the future, and most of all, to start thinking with our hearts. *S.L., with reporting by A.B.*

Trademark white dominates a rendering of Calatrava's transit hub.

IMAGES: COURTESY DBOX/LMDC

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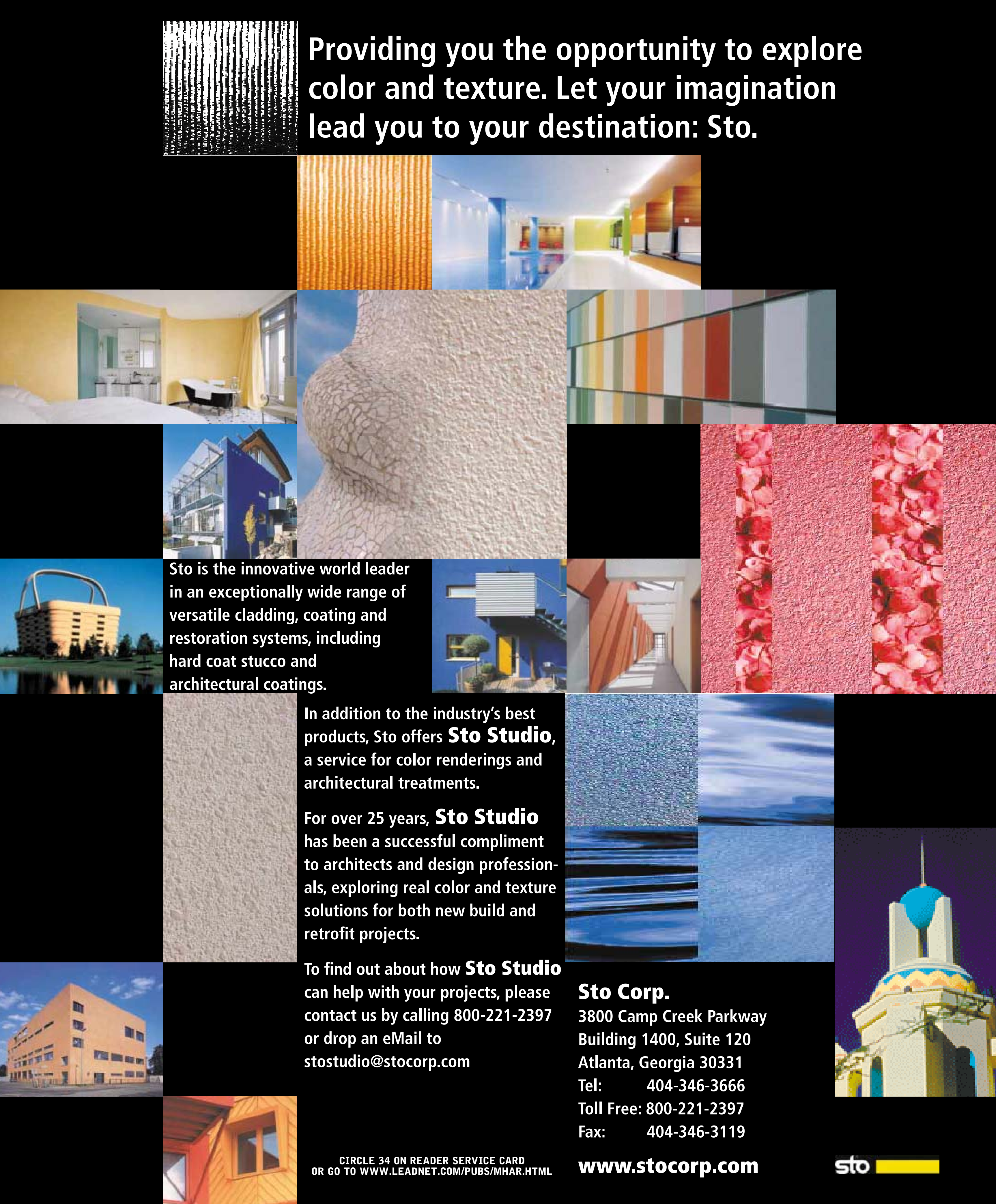

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Dates & Events

New & Upcoming Exhibitions

Home Tours Architects
San Francisco
September 1–October 31, 2004
An exhibition celebrating the 2004 Home Tours architects and homes, taking an in-depth look at the unique residences from the architects' perspective. At the AIA SF Gallery. Visit www.aiasf.org/archandcity for further information on all events in the Architecture and the City series.

Rita McBride: Theater Concrete
Long Island City, N.Y.
September 12–November 29, 2004
McBride's work examines elements of architecture and design through contemporary sculpture. At the Sculpture Center. For information, call 718/361-1750 or visit www.sculpture-center.org.

La Biennale di Venezia 9th International Architecture Exhibition, U.S. Pavilion 2004
Venice, Italy
September 12–November 7, 2004
ARCHITECTURAL RECORD and The Bureau of Educational and Cultural Affairs of the U.S. Department of State are presenting *Transcending Type*, an exhibition featuring six cutting-edge U.S. firms that explore new models for iconic building types. The presentation includes drawings, digital media, and three-dimensional installations. Go to www.labiennale.org for more information.

Samuel Mockbee and the Rural Studio: Community Architecture
Scottsdale, Ariz.
October 1, 2004–January 2, 2005
This traveling exhibition includes both models and photographs of Auburn University's Rural Studio projects, as well as a number of Mockbee's paintings and sketchbooks from the Rural Studio. At the Scottsdale Museum of Contemporary Art. Call 480/994-2787 or visit www.smoca.org.

The GardenLab Experiment
Pasadena, Calif.
September 7–October 17, 2004
The Experiment is an ecology lab bringing together within a single forum a diverse group of designers, artists, scientists, activists, and performers involved in environmental and ecologic issues. At the Art Center of Design. Visit www.artcenter.edu/events/gardenlab for further information.

Massive Change: The Future of Global Design
Vancouver
October 2, 2004–January 3, 2005
An exhibition that takes a look at how rapidly evolving technologies have enabled design to affect change on a global scale, and how this phenomenon has placed us at the beginning of a new, unprecedented period of possibility. At the Vancouver Art Gallery. Call 604/662-4719 or visit www.vanartgallery.bc.ca.

Washington: Symbol and City
Washington, D.C.
Opening October 9, 2004 (ongoing)
This long-term exhibition examines the story of this most complicated of cities, both a symbolic federal capital and a living city of neighborhoods and families. Recently re-curated to assure ongoing relevance. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

Second Annual OpenHouseNewYork (OHNY)
New York City
October 9–10, 2004
OHNY promotes awareness of New York's architectural and design achievements by providing the public with free access to sites of historic and contemporary significance in neighborhoods in all five boroughs. Call 917/626-6869 or visit www.ohny.org.

Frank Gehry, Architect: Designs for Museums
Washington, D.C.
October 2, 2004–February 21, 2005
A multimedia exhibition showcasing Gehry's design contributions and celebrating both his completed buildings as well as several yet-to-be-realized museum projects. An exhibition of Gehry's furniture is also on view. At the Corcoran Gallery of Art. Call 202/639-1770 or visit www.corcoran.org.

The Sixties: Montreal Thinks Big
Montreal, Quebec
October 20, 2004–August 14, 2005
Montreal's transformation in the 1960s made the city an archetype of the great metropolises of the Western world. As host of Expo 67, it asserted itself as a city of the future. This exhibition, at the Canadian Centre for Architecture, will illustrate the processes that brought about the changes that were recognized all over the world. Call 514/939-7000 or visit www.cca.qc.ca.

1st Architectural Biennial Beijing 2004
Beijing
September 20–November 20, 2004
The first serial exhibition of architectural culture and the building industry in China, comprising three parts: exhibition, forum, and architectural theme park. Call 86-10-880/83260-6263 or visit www.abbeijing.com.

Ongoing Exhibitions

Big & Green: Toward Sustainable Architecture in the 21st Century
Chicago
Through September 12, 2004
This national touring exhibition presents 50 projects from around the world portraying architecture that demands less of our natural resources and infrastructure, enhances comfort, and is economical over the life of a building. In the ArchiCenter. Call 312/922-3432 or visit www.architecture.org.

Nothing More Modern: PSFS
New Haven
Through November 5, 2004
The first exhibition to explore the design, construction, and adaptive reuse of the landmark Philadelphia Saving Fund Society Building (PSFS), an icon of International Style Modernism. In the gallery of Yale's Art and Architecture Building. Call 203/432-2288 or visit www.architecture.yale.edu.

Playing the Field: The Art and Design of Godley-Schwan
Philadelphia
Through November 19, 2004
This retrospective exhibition of furniture, process drawings, and sketchbooks highlights the bridging of craft, art, and design—a trend that took off in the American furniture market during the 1980s and 1990s. At the Philadelphia University Design Center. Visit www.philau.edu/designcenter.

Richard and Dion Neutra VDL Research House II Exhibit
Los Angeles
Through September 9, 2004
The home of the architect and his family is represented in models, photographs, and drawings. At A+D Museum. Call 310/659-2445 or visit www.aplusd.org.

Dates & Events

Ronan and Erwan Bouroullec
Los Angeles
Through October 18, 2004
The first North American museum exhibition to focus on the work of French designers Ronan and Erwan Bouroullec. The brothers have burst onto the international design scene in the past few years with their futuristic furniture, products, and interior designs. At the Museum of Contemporary Art. Call 213/621-2766 or visit www.moca-la.org for additional information.

Beyond the Box—The Architecture of William P. Bruder
Los Angeles
Through October 14, 2004
An exhibition of Will Bruder's work will be on view at A+D Museum. For more information, call 310/659-2445 or visit www.aplusd.org.

Chicago Green
Chicago
Through September 12, 2004
Models of 15 green buildings designed by Chicago-based architects for sites in Chicago and around the world are presented in this exhibition. In CitySpace. Call 312/922-3432 or visit www.architecture.org.

Lectures, Conferences, Symposia

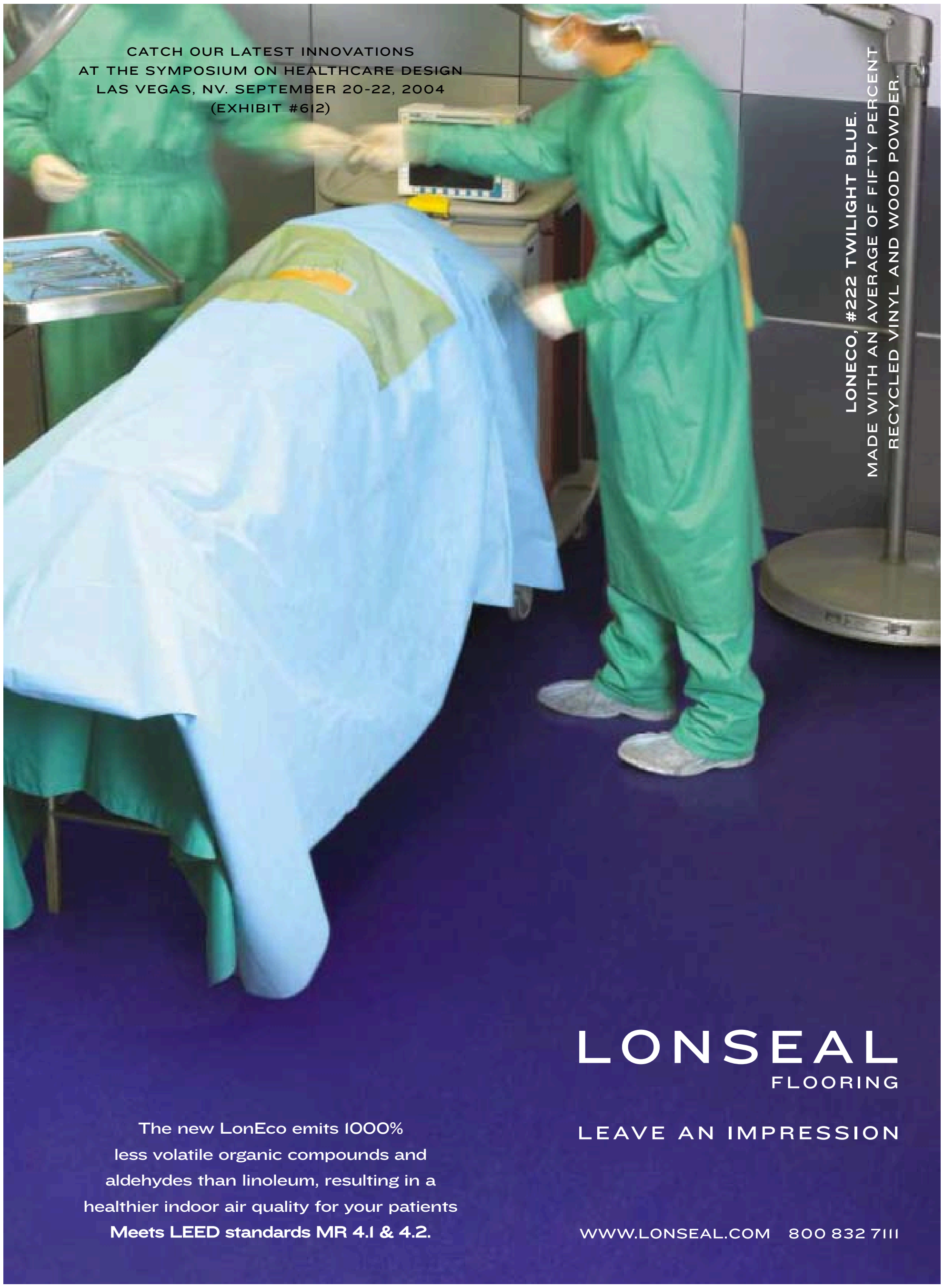
Paul Goldberger on the Rebuilding of Lower Manhattan
Washington, D.C.
September 7, 2004
Paul Goldberger, the dean of the Parsons School of Design and Pulitzer Prize–winning architecture critic for *The New Yorker*, will discuss his new book, *Up from Zero: Politics, Architecture and the Rebuilding of New York*. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

Charles A. DeBenedittis: Winner of the 2004 Turner Prize
Washington, D.C.
September 27, 2004
Charles A. DeBenedittis, senior managing director of design and construction at Tishman Speyer Properties, is the third recipient of the National Building Museum's Henry C. Turner Prize for Innovation in Construction Technology. In conversation with Norbert Young, FAIA, president of McGraw-Hill Construction, DeBenedittis will discuss some of his notable projects and his involvement in innovations in building technology, materials, and methods. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

Building for the 21st Century: The Cost and Financial Benefits of Green Buildings
Washington, D.C.
September 28, 2004
Greg Kats, principal of Capital E Group, will discuss the most current research that indicates green design is very cost-effective for most buildings today. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

International Practice Issues: Cross-Cultural Partnerships
New York City
October 2, 2004
This conference will bring together architects from around the world to speak about the challenges and opportunities of international collaboration and joint ventures. At the Center for Architecture. Call 202/626-7415 or visit www.aia.org/international.

Design Charrette for Social Justice
Cincinnati
September 17–19, 2004
Miami University's Center for Community



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EMBRACE THE PAST.

Dates & Events

Engagement in Over-the-Rhine and Architecture for Humanity (AFH) invite the design community to take part in linking design advocacy with social movements addressing homelessness, poverty, and civil rights. Visit www.architectureforhumanity.org.

Modern Dutch Housing: A Living Architectural Laboratory
Amsterdam
October 3–8, 2004
This conference will investigate the history, planning, and contemporary design of Dutch social housing with seminars, site visits, a charrette, and discussions with eminent Dutch architects, planners, academicians, historians, and city officials. For further information, visit www.aia.org/cod/brochure/041003/default.asp.

The Tile Seminar
Boston: September 20, 2004
New York City: September 21, 2004
Philadelphia: September 22, 2004
Washington, D.C.: September 23, 2004
The seminars are intended to educate the architectural and design communities about the latest technologies, revolutionary products, installation systems, techniques, specifications, and standards within the tile industry, and provide tools necessary to better understand and specify tile. Call 800/472-4588 or visit www.tileseminar.com.

The 2004 Design Awards Symposium
New York City
September 20, 2004
The AIA New York Chapter is holding a moderated discussion that presents and honors the finest examples of architecture, interiors, and unbuilt projects submitted by local firms and design individuals. At the new Center for Architecture. Call 212/358-6117 or visit www.aiany.org.

100% Design 2004-x10
London
September 23–26, 2004
The 10th edition of the U.K.'s foremost international contemporary design exhibition, providing a unique mix of small and large companies, established and new designers, U.K.-based and international exhibitors. At Earls Court 2. Call 44(0)870/420-4919 or visit www.100percentdesign.co.uk.

New Design Cities
Montreal, Quebec
October 6–8, 2004

An international symposium that aims to discuss different positioning and development strategies through design used by such cities as Antwerp, Glasgow, Lisbon, Montreal, New York, Saint-Etienne, and Stockholm. At the Canadian Centre for Architecture. Visit www.ville.montreal.qc.ca/colloquedesign.

Green Futures: A Forecast for Architecture in Chicago
Chicago
September 9, 2004
The steel frame and the elevator transformed the urban landscape of 19th-century Chicago. Will the city's current push for rooftop gardens and other green building strategies have an equally significant effect? Five of Chicago's leading young architects debate the possibilities. At the Museum of Contemporary Art. Call 312/397-3841 or visit www.mcachicago.org.

Sustainable Communities: Learning from the Dutch Experience
Chicago
September 29, 2004
A symposium cosponsored by the Alphawood Foundation, the Consulate General of the Netherlands, and the Illinois Institute of Technology featuring an array of Dutch speakers on the topic of sustainability. At the McCormick Tribune Campus Center, Illinois Institute of Technology. Call 312/567-3000 or visit www.iit.edu.

Introduction to the Structural Provisions of the 2003 International Building Code
Orlando, Fla.
October 13–14, 2004
A two-day course offered to benefit architects, engineers, planners, designers, developers, builders, and others who use building codes in planning and designing facilities for human occupancy. At the University of Wisconsin-Madison Department of Engineering Professional Development. Call 608/262-0638 or visit www.epdweb.engr.wisc.edu.

The 8th International DOCOMOMO Conference
New York City
September 26–October 2, 2004
"Import/Export: Postwar Modernism in an Expanding World 1945–1975" is the topic of the annual conference held by the international organization dedicated to the documentation and conservation of buildings, sites, and neighborhoods of the Modern movement. At Columbia University. Visit www.docomomo2004.org or www.docomomo-us.org.

Tour of the San Francisco-Oakland Skyway Bridge Casting Yard and Construction Site
Oakland
October 4, 2004
Segment casting is under way for the $1 billion San Francisco-Oakland East Bay Skyway Bridge. This ASBI tour involves a bus trip to the casting yard in Stockton, with luncheon and travel to the construction site on the Harbor King. Call 602/997-9964.

Frank Gehry
Washington, D.C.
September 28, 2004
Frank Gehry speaks in the Corcoran Gallery of Art's Frances and Armand Hammer Auditorium. For additional information, call 202/639-1770 or visit www.corcoran.org.

The ASLA 2004 Annual Meeting and Expo Salt Lake City
October 29–November 2, 2004
The American Society of Landscape Architects (ASLA) Expo will offer more than 500 exhibits, featuring the latest landscape architecture products and services. The theme of the meeting will be "Natural Spaces, Public Places." For more information, call 202/898-2444 or visit www.asla.org.

Baltimore Architecture Week
Baltimore
October 9–16, 2004
A series of events emphasizing the importance of the design community through lectures, tours, films, and exhibits. Visit www.aiabalt.com for further information.

Taliesin West: Building in Harmony with Nature
Scottsdale, Ariz.
October 21–23, 2004
The Scottsdale site will host tours, presentations, and dinners honoring Frank Lloyd Wright's sensitivity to fragile lands. The conference will explore several of the design concepts that dominated Wright's 70-year career. For further information, call 480/627-5373 or visit www.franklloydwright.org.

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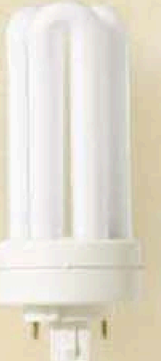

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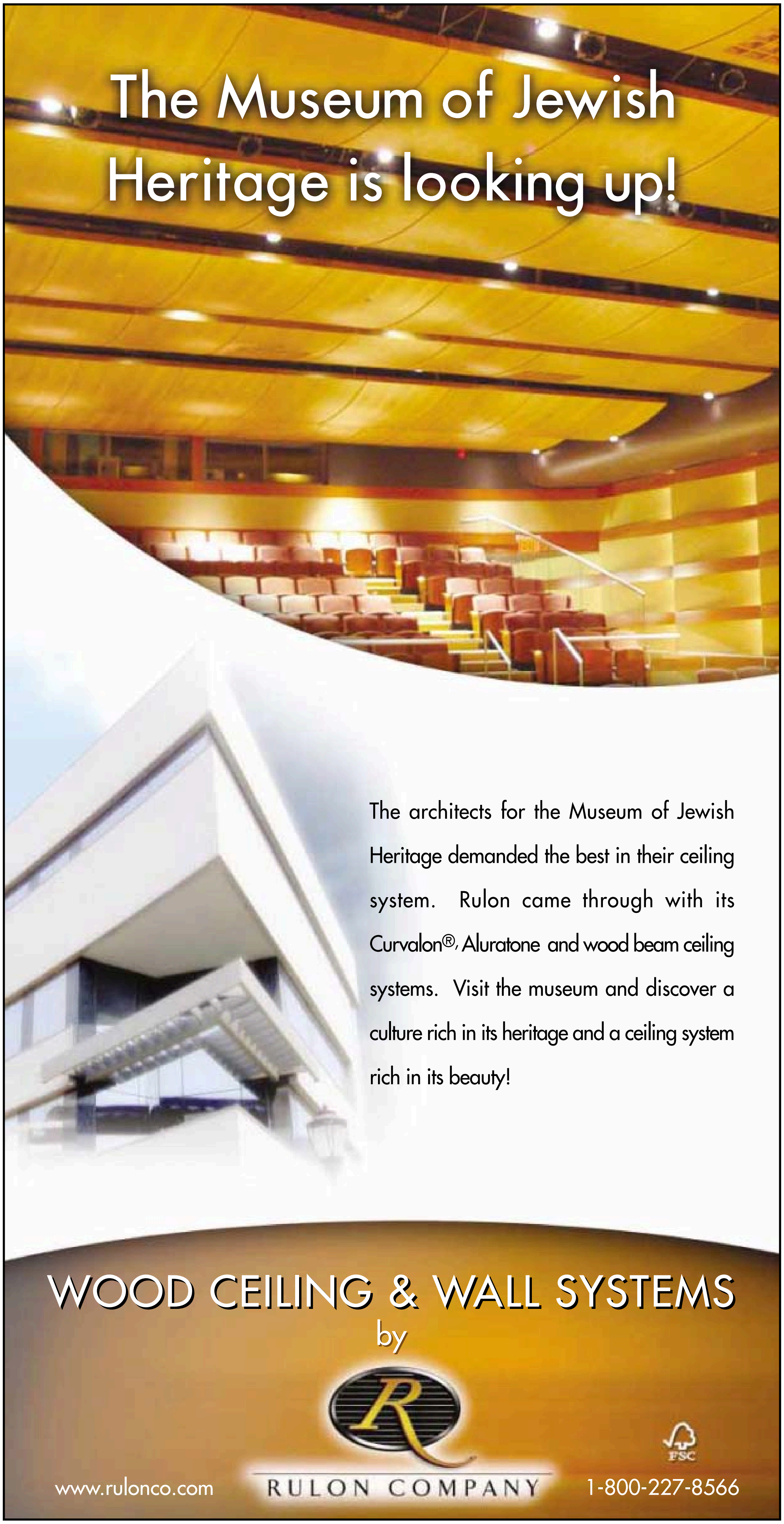

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Dates & Events

Competitions

The International Bauhaus Award

Deadline: October 23, 2004

When cities become transit places, the urban space changes: Flexibility and mobility become key qualities. For further information, visit www.bauhaus-dessau.de or e-mail award@bauhaus-dessau.de.

Architecture for Humanity 3rd International Design Competition

Deadline: October 1, 2004

A competition to design a facility in Somkhele, South Africa, an area with one of the highest HIV/AIDS rates in the world. It will be run by medical professionals and will serve as a gathering place for youth between ages 9 and 14. For more information, visit www.architectureforhumanity.org.

The Annual WinGuard Home Showcase Contest

Deadline: October 31, 2004

The contest is open to internationally licensed builders and architects with projects in coastal areas, specifying WinGuard Impact-Resistant Windows and Doors. Call 877/550-6006 or visit www.winguard.com.

Southern Branch Design Competition

Deadline: September 16, 2004

The National Palace Museum, ROC, is sponsoring an international architecture competition encompassing 12–15 hectares (30–37 acres) of planning and design in Taibo City, Chiayi County, Taiwan. Visit www.npm.gov.tw.

C2C Home Competition
Roanoke, Va.

Registration deadline: November 15, 2004
Competition deadline: December 15, 2004

Entries must be designed with a goal of achieving new standards in sustainability and lead to the actual construction of at least 10 new homes. For more information, visit www.c2c-home.org.

Rome Prize 2005

Deadline: November 1, 2004

The American Academy in Rome fellowships are awarded in several fields, including Architecture, Design, Historic Preservation and Conservation, and Landscape Architecture. For further information, call 212/751-7200x47 or visit www.aarome.org.

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For and about the new generation of architects

archrecord2

FOR THE EMERGING ARCHITECT

archrecord2 takes a stroll through Boston to see what the architects of Studio Luz are doing. Their projects provoke the senses in several inventive ways. Find out more about them in the **Design** report below and on our Web site. What's a busy architect to do when there's not enough time to attend a desired event? In our **Work** section, Davis Marques discusses the creation of Architecture Radio.

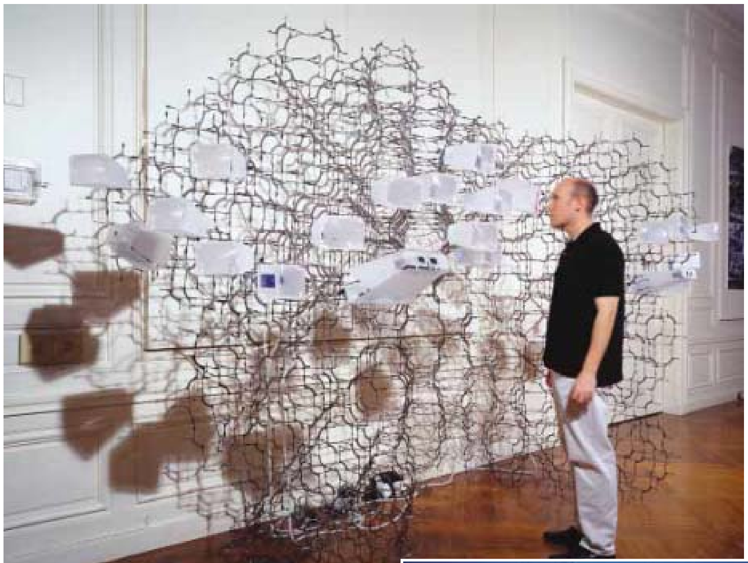
DESIGN

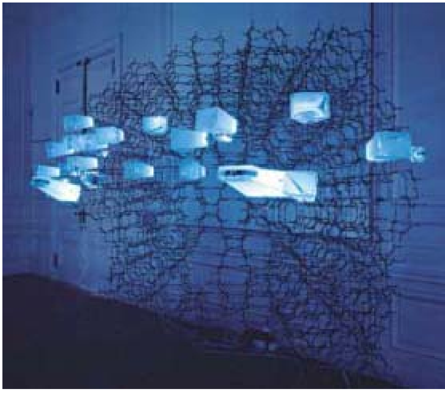
Redefining social spaces

Husband and wife team Hansy Better Barraza and Anthony Piermarini met as undergraduates at Cornell University and later attended the Harvard Graduate School of Design. Remaining in Boston after graduation, they found themselves working for several firms, including Office dA, where Barraza was employed, and Kennedy and Violich Architecture, where Piermarini did a stint. The couple decided to take the leap and establish their own practice, Studio Luz, in 2001. It did not take long to garner work or attention: This past year they were one of the winners of the Architectural League's Young Architects Competition.

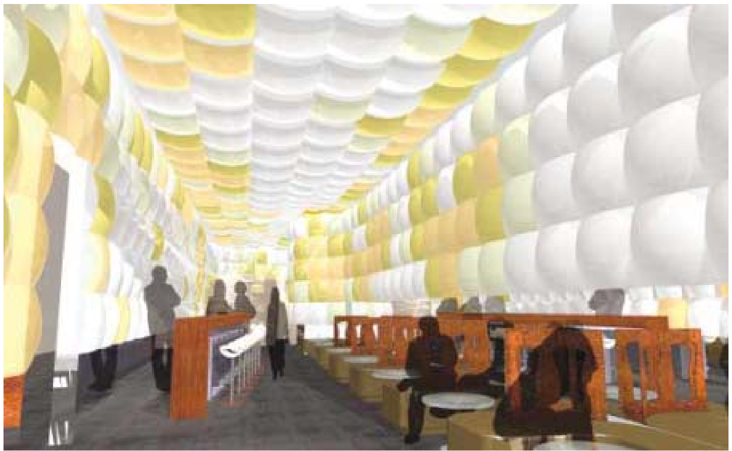
Barraza explains that the competition's theme, "If … Then," presented a challenge for her and Piermarini to explore formally what goes into the creative process. "In some cases, architecture is transmutation," she says, "and in those instances, a final design is never agreed upon between the architect and client. Instead, it's an evolving process." For their entry in the League's exhibition, the pair set out to construct an armature whose final form was not fully predetermined. The result was a framework with viewfinders that would hold and display photos of their work and engage the audience.

Studio Luz's initial projects allowed the team to explore privatizing public spaces, as well as controlling interior environments. In Boston's OmBar, for example, the clients were in search of a venue for entertainment that would feel exclusive enough for private dining but could be transformed into a sleek





Young Architect's Forum Installation, New York City, 2004
A study in transmutation, this reusable and adaptable exhibition engages its viewers. The magnified viewfinders that present the firm's projects are lit by electroluminescent film.



Diva Lounge, Somerville, Mass., 2004
Many aspects of this project, from lighting to seating, provoke both the tactile and visual senses. The bubble interior, using LED lighting and heat sensors, reacts to the movement and massing of people.

PHOTOGRAPHY: COURTESY GREG IRIKURA (RIGHT TWO); STUDIO LUZ (BOTTOM)

lounge space. Recycling existing materials from what was once a subterranean bank vault became part of the design. The architects took a large amount of the remaining tempered glass, shattered it, and covered the shards with translucent resin to form the central column, the bar, and the floor. Creative lighting of the composite crushed glass and resin produces both sparkle and ambience.

Continuing their interest in lighting and design that produce an all-encompassing sensory experience, Studio Luz began work on Diva, another lounge in the Boston area. Referring to the design of Diva, Barraza says, "Architecture doesn't speak, so we took it upon ourselves to create a way for it to communicate." Covering the walls with LED-illuminated domes and heat sensors, they created lighting that changes as the patrons of the lounge move about. As people congregate in one section and the density and temperature changes, the lights respond.

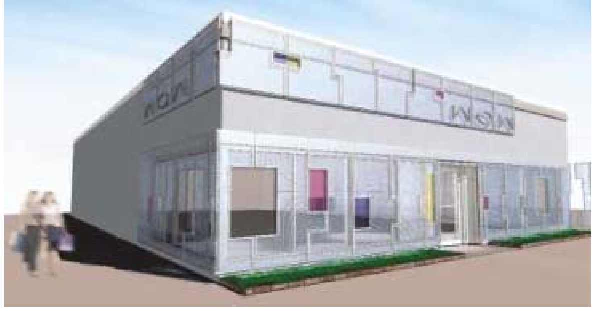
In another project, Studio Luz has found an opportunity for expression in the public realm. With W.O.W., a woman's clothing boutique that features the work of local artisans and tailors, the owners wanted a funky facade that would sheathe the store, a former gas station. Piermarini explains that the scheme, inspired by fashion design, will utilize irregularly shaped polycarbonate panels that will fit together like puzzle pieces.

The firm's upcoming projects are more institutional and much larger in scale. These include a Fellowship Center in Massachusetts and an orphanage in Haiti that will house 90 children and include a school component for 400 as well as a medical clinic. "These projects are meant to have a major community presence and will take on social responsibility," says Piermarini. "This work really inspires us." ***Randi Greenberg***

For more projects and photos from Studio Luz's portfolio, go to archrecord.construction.com/archrecord2/.

OmBar, Boston, Mass., 2002

Set in what was once a bank, the architects used several existing elements to their advantage, like designating the vault as a VIP area. The designers sought to create a flexible, multifunctional space.



W.O.W., Newton, Mass., 2004

Experimentation with prototypes and materials resulted in a jigsaw-puzzlelike design for the building's facade. The store owners will be able to display their work in the apertures within the design.

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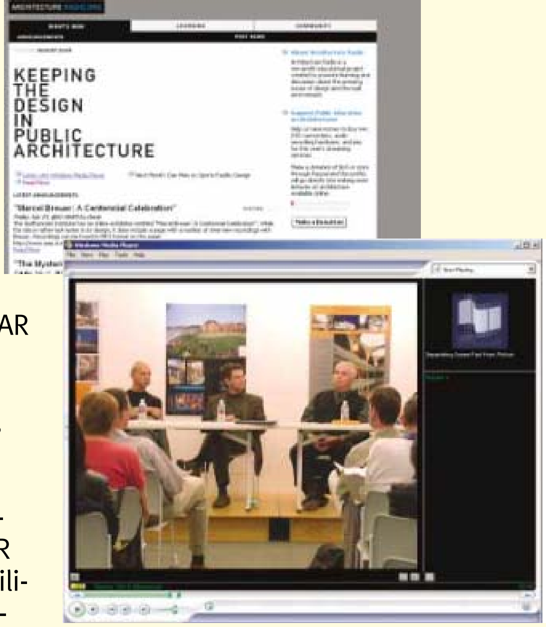
Architecture hits the virtual airwaves

It’s a common lament. While architectural-based events, lectures, and interviews abound, for many there is either not enough time to attend them or they occur in a completely different time zone. In the summer of 2002, designers Davis Marques and Nikki Chen came up with a solution: the Web site Architecture Radio (AR).

Marques and Chen realized that in the two years after graduating from SCI-Arc, due to the hours they were logging at their firms, they were able to attend only one lecture at their alma mater. “There are a lot of people out there just like us,” says Marques. “While we want to continue to learn by attending these events, we just can’t make the time.” Since the technical aspects of creating a Web-based media server were something with which Marques was familiar—he had recently set up an audio server so friends could listen to music stored on his computer (“invariably, I end up leading technical aspects on projects with my firm,” he explains)—launching AR was not too much of a challenge.

The site’s content, with topics ranging from design to marketing, is drawn from events in AR’s local San Francisco area as well as in other locations, where people volunteer to tape events. Early on, AR decided its role would be as a facilitator rather than originator of content. “This organization’s purpose is to make things more convenient and to utilize content that is already out there in a more effective and simpler manner,” says Marques. Also available on the site are links to other informational sites with streaming media.

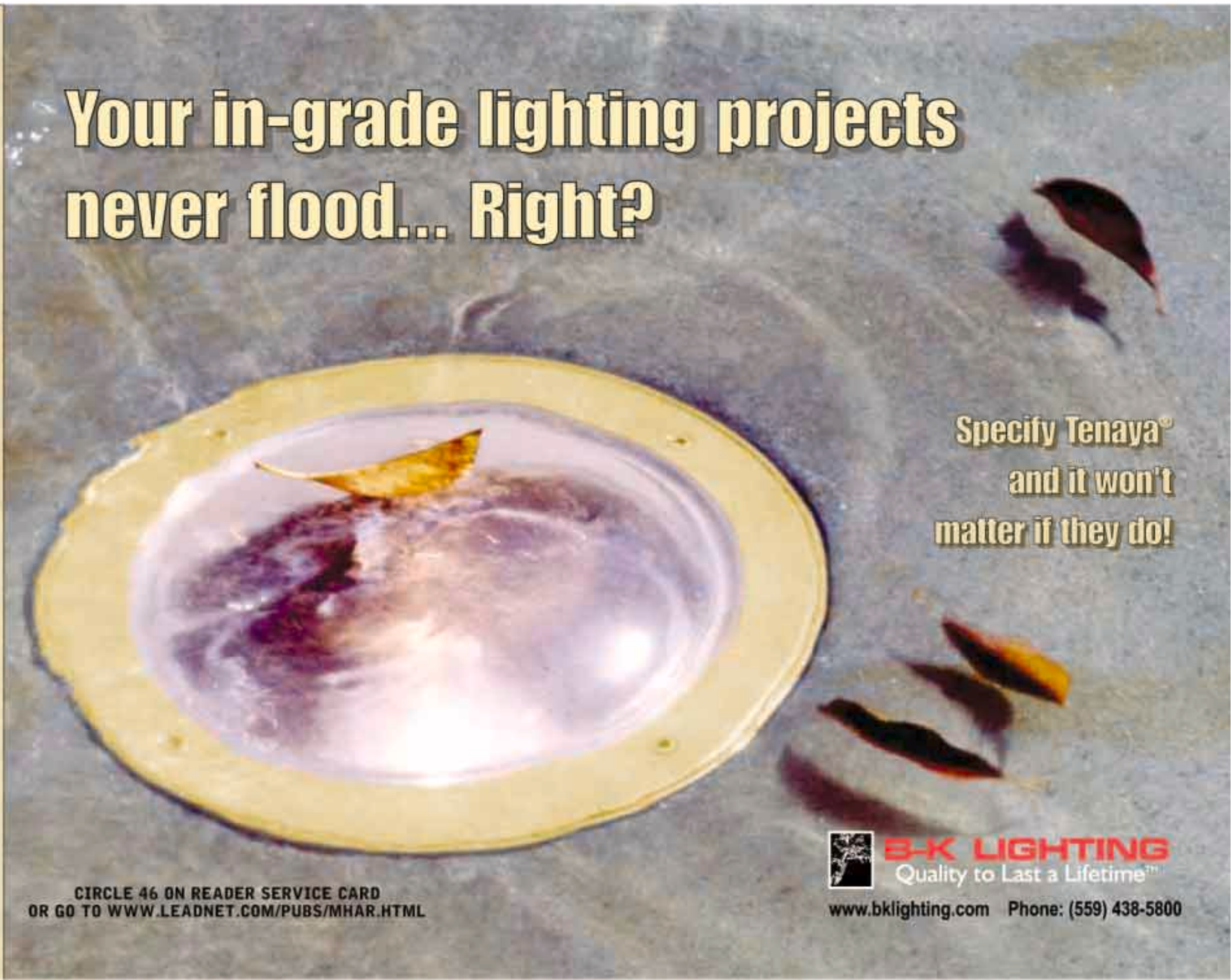


An example of a panel discussion in streaming video from Architecture Radio’s Web site.

Marques and Chen’s vision reaches beyond the architectural community. Marques explains, “We want to be a place that architecture professionals and students come to, but we also hope to attract the general public, who can learn about the how’s and why’s of the field.” *R.G.*

To hear Architecture Radio’s lectures and discussions, go to www.architecture-radio.org.

PHOTOGRAPHY: COURTESY ARCHITECTURE RADIO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Cairo wrestles with authenticity while restoring its past and designing (or redesigning) its future

Correspondent's File

By Seif El Rashidi

As far as cities go, Cairo is an urban enfant terrible. Unruly and continually expanding, its dense mass defies any attempts at homogenization. It is a rebel's delight and a planner's challenge. Even in the city's quiet residential areas, parked cars jostle for space on tree-lined streets, detracting from the old-world feel of turn-of-the century architecture. The 1960s quarters, planned as practical residential extensions to the city center, have taken on a new life. Except for the odd house or two, tallish buildings have replaced three- or four-story apartment blocks—but this is nowhere near a metropolis of slick skyscrapers. Exterior fittings vary from apartment to apartment, not building to building, and ground-floor shops boast a riot of colors and forms, visually unrelated to what lies above them.

Yet urban free-spiritedness makes Cairo livable, turning an immense monument to density into a multitude of personalized spaces, neither Belle Epoque nor cutting-edge, but remarkably human.

That said, there are frequent attempts to tame the city. Cairo's medieval core, long ignored despite its architectural and historic wealth, is suddenly attracting official attention. In Gamaliyya, its northern, more prosperous half and the heart of the tourist trade, wealthy merchants moved out long ago, leaving the less affluent to deal with deteriorating infrastructure and a crumbling building stock. Government officials are flirting with the idea of turning the area into an "open-air museum"—in other words, sanitizing the district, restoring its monuments, and replacing its local industries with more bazaars and tourist traps. There is much to be said for upgrading historic Cairo—its condition is dire—but transforming it into a Disney-style city of the orient will only destroy its most redeeming quality: authenticity. It's a tall order anyhow: This is a place where traditional markets selling everything from onions to water pipes are doing good business, and as it is, there are enough souvenirs to fill every tourist backpack several times over.

There's certainly a buzz of restoration work in the air, and it's hardly the quiet, meditative activity it's made out to be. But the results are surprisingly serene, especially for Cairo. Darb al-Asfar, an alleyway with three historic houses recently restored with a grant from the Arab Fund for Development, is Gamaliyya's anomaly: It's peaceful and pristine. There's greenery, and the architecture is bona fide 17th century, making it a much-loved place by the architecturally savvy who know that it's there. And that's the problem. Historic Cairo is a no-go zone for most Egyptians who don't work or live there; private investment is almost nil; urban decline is steady; and gentrification just isn't happening.

Instead, recently constructed motorways, linking the city center to new suburbs, have ripped through Cairo's innards, exposing an expanse of boxy, unfinished-brick buildings

Seif El Rashidi is an urban planner at the Aga Khan Trust for Culture's Cairo Project.

Suburban construction encroaches on agricultural land southeast of the pyramids (above). Italianate villas (right) celebrate escapism, a model of American suburbia, and an abstracted image of the past, but ignore local culture. Restoration of the Qalawun mosque continues in the city's historic center (below).

PHOTOGRAPHY: © YAHIA SHAWKAT

engulfing the countryside at horrific speed. Beyond these, where palm groves and alfalfa fields still remain, is Cairo's new urban playground, which the upper classes, seeking refuge from the city's relentless presence, are increasingly calling home. Residents here range from well-off by local standards to fantastically rich, and most, though culturally Egyptian, are buying into a model of wealthy American suburbia. The new architectural formula is simple: arched windows, gabled roofs, and stucco—a clear reaction to the brutal functionalism of the post-1950s building scene. A textbook definition of pastiche? Certainly. An architect's horror? Almost always. But also, a more comfortable living environment; more attention to aesthetics, space, and tranquility. As an alternative to stressful city-center apartment life, how many care that the Corinthian columns are tacky and the colors fit for a doll's house? A few.

On a hill beside the pyramids, the Khalifé residence commands an excellent view. And this is pop-star territory: Amr Diab—Egypt's best-known—lives next door, in a pseudo-Moorish, pseudo-Italianate mansion. The Khalifés, a sophisticated Lebanese-Egyptian hotelier couple, represent that segment of Middle Eastern society overlooked in the die-hard stereotyping of wealthy Arabs as crude and oil-rich. They commissioned the Beirut-based Atelier des Architectes Associes (Jacques Liger-Belair, Jean-Pierre Mégarbané, and Georges Khayat) to design a private house in Cairo that would neither reject tradition nor slavishly imitate it. The result is a refreshingly modern, spacious residence, where crisp lines and pure forms reflect an intelligent interpretation of the local past.

A discreetly placed main entrance is set alongside a fountain in a raised courtyard. A vaulted reception hall is awash with diffused light. A bath resides where sunbeams stream in through round openings in the ceiling. Wooden screens grace the ground-story windows. All these are the trappings of what could easily have been revivalist architecture, except that, fortunately, there isn't a grain of revivalism here. Even squinting, the surest test of disguised historicist architecture, exonerates the architects—the building still looks modern when the details blur.

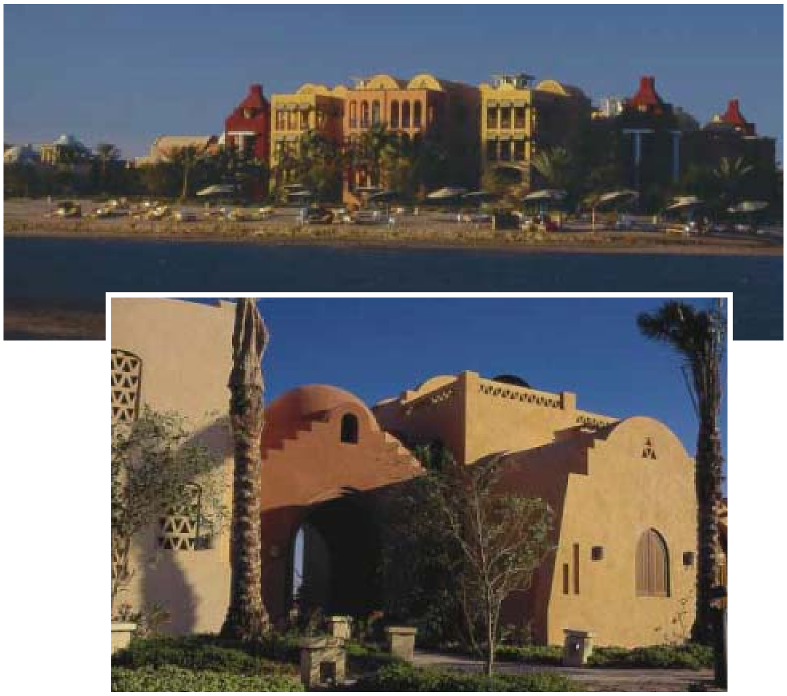
Evidently, contemporary architecture with an abstracted spirit of the past is what the Egyptian intelligentsia is looking for. The house earned the architects a commission to build the personal home (near the Khalifés) of one of the country's leading businessmen, Samih Sawiris, who gave Egypt El Gouna, a 7-square-mile town of holiday villas, hotels, and leisure facilities on the Red Sea. Like all developments, it is artificial; yet, unlike many, also idyllic. El Gouna is Sawiris's answer to the indiscriminate craze for construction that sounded the death toll for much of Egypt's coastline. It is environmentally conscious, low-rise, and attractive.

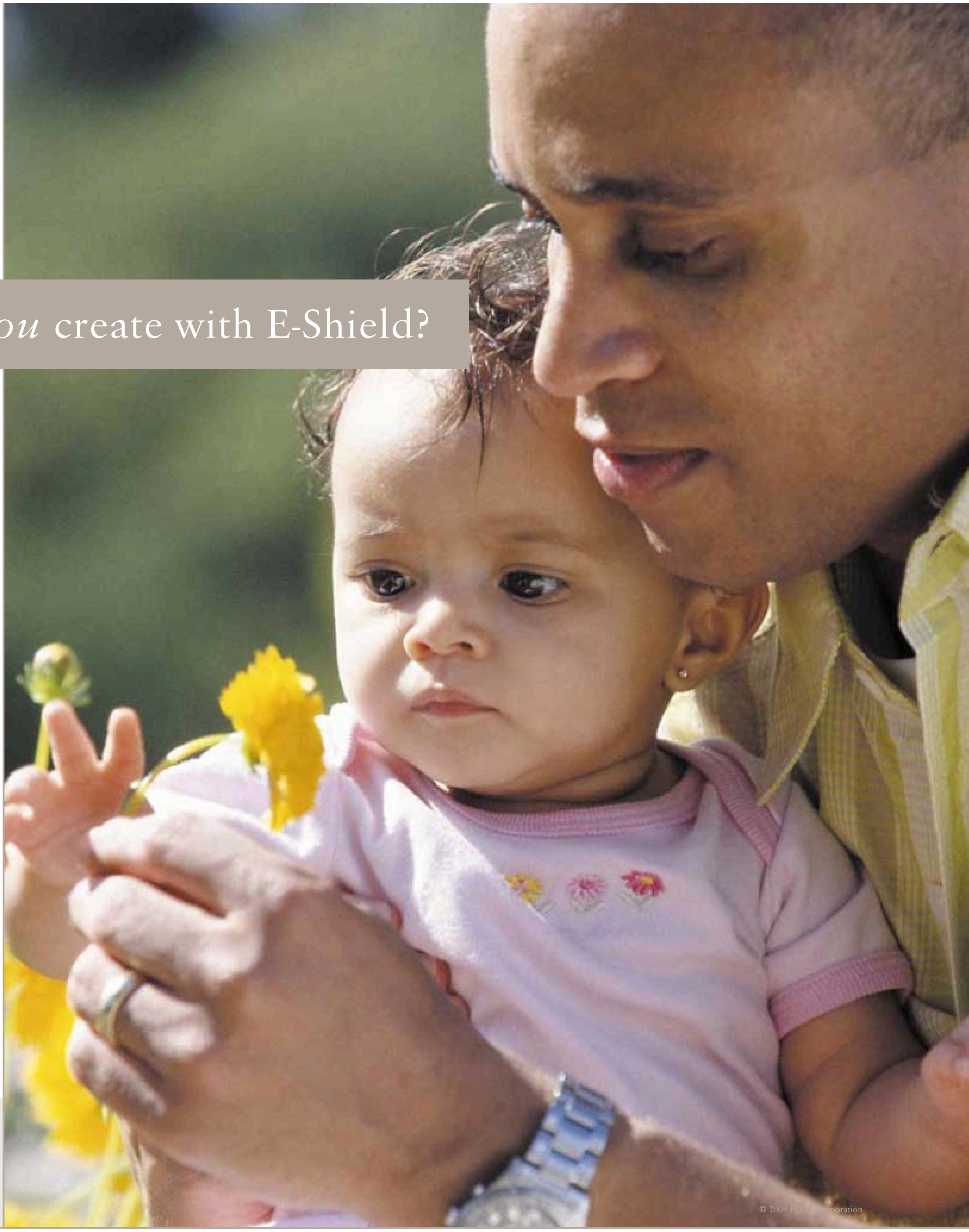
In today's Egypt, developers like Sawiris, involved in numerous projects across the country, can be a major influence. A household name, he is synonymous with big business and educated wealth.

Fortunately, Cairo's new suburbs are not exclusively the prerogative of the super-rich. Lower land prices on the outskirts have enabled the comfortably-off to build on what was once the desert. Residential developments dot the landscape, and major institutions have established themselves on accommodating premises away from the constraints of the inner city. Even the American University in Cairo, a landmark of the city center for close to a century, has chosen to move out to what is appropriately called "New Cairo."

In the studio of Ahmad Hamid Architects, a couple of designers are relentlessly streamlining an extended-family apartment building for New Cairo. And this is Modern stuff, not a scaled-down version of pop-star eclecticism. Hamid, a former pupil of Egypt's revolutionary master architect, Hassan Fathy, sees the current state of affairs as a result of the failure of the 1960s socialist idiom to provide a good life. "There was no continuum to the 1950s adequate middle-class home, so the new generations began to idealise the past. This created an urban expression with no real architecture, simply added 'architectural flavoring': You

Some worry that meticulous renovation in the historic Gamaliyya district (above) will strip it of its raw character and "Disney-fy" the city. A well-known new suburb, El Gouna (below two), mixes historicist styles with enlightened design. Many relish such building as indicative of the "good life," but others call them artificial.





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Boxy developments outside of Cairo (above). The building boom could spur architectural innovation, but few clients are interested in progressive design.

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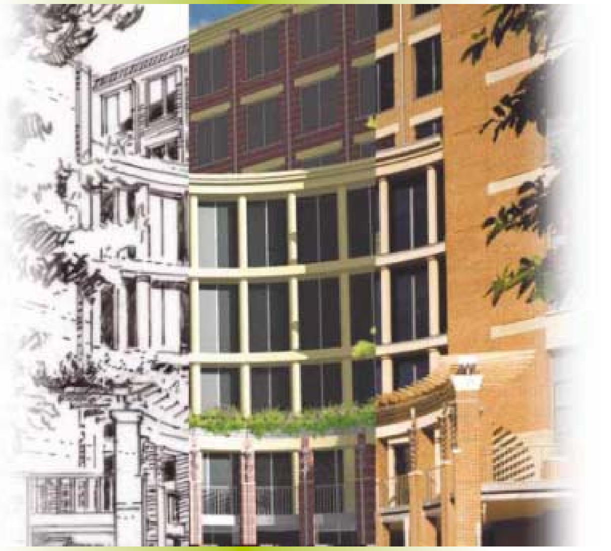
Working with Fathy exposed Hamid to developing architectural solutions inspired by local culture and context. In Hamid's recent projects, tradition is expressed in the spatial modulation of his work. Asked about the compatibility of Modern architecture and Arab-Islamic culture, Hamid responds, "In essence, they both stem from the same principle of simplicity and reductionism. What did the Bedouin have apart from a camel, a shawl, a tent, and infinite space?"

It's not difficult to be convincing when you've got two decades of experience and speak in sound bites, as Hamid does.

Younger architects face tougher times. The low-rise residential nature of New Cairo has given them the chance to design their own buildings outside the context of a larger architectural office. But most clients really aren't interested in contemporary architecture; "modern living" only brings to mind the grim fiascos of profit-driven developers who built soulless tower blocks, cut corners, crammed people in, and in the long run made nobody happy. Ayman El Gohary, an architect with 10 years experience at Community Design Collaborative—the firm designing the buildings for the American University campus—and now working on his own projects, explains that there's often a difficult choice to be made between meeting clients' demands for a "classical-style" house and making a name for oneself as a young architect with talent. It's sometimes a no-win situation, since for every architect who sticks to his guns there are dozens willing to churn out anything to keep the client happy (read wanna-be Classicism, with proportions bad enough to leave Greece and Rome's most stoic marble statues in tears).

Good architecture thrives on challenges, and Cairo provides those. Finding housing solutions for a city of 20 million isn't easy. And the truth is, abandoning the city for the suburbs is like rushing for the lifeboats and finding them still tied to the ship, which isn't really sinking anyway. The time is right for some urban soul-searching, and a lot less escapism. Things may not be looking rosy, yet at least in design terms, Cairo's not a straightlaced place. Once all the kitsch has been exposed for what it is, there could be room for some serious architecture. ■



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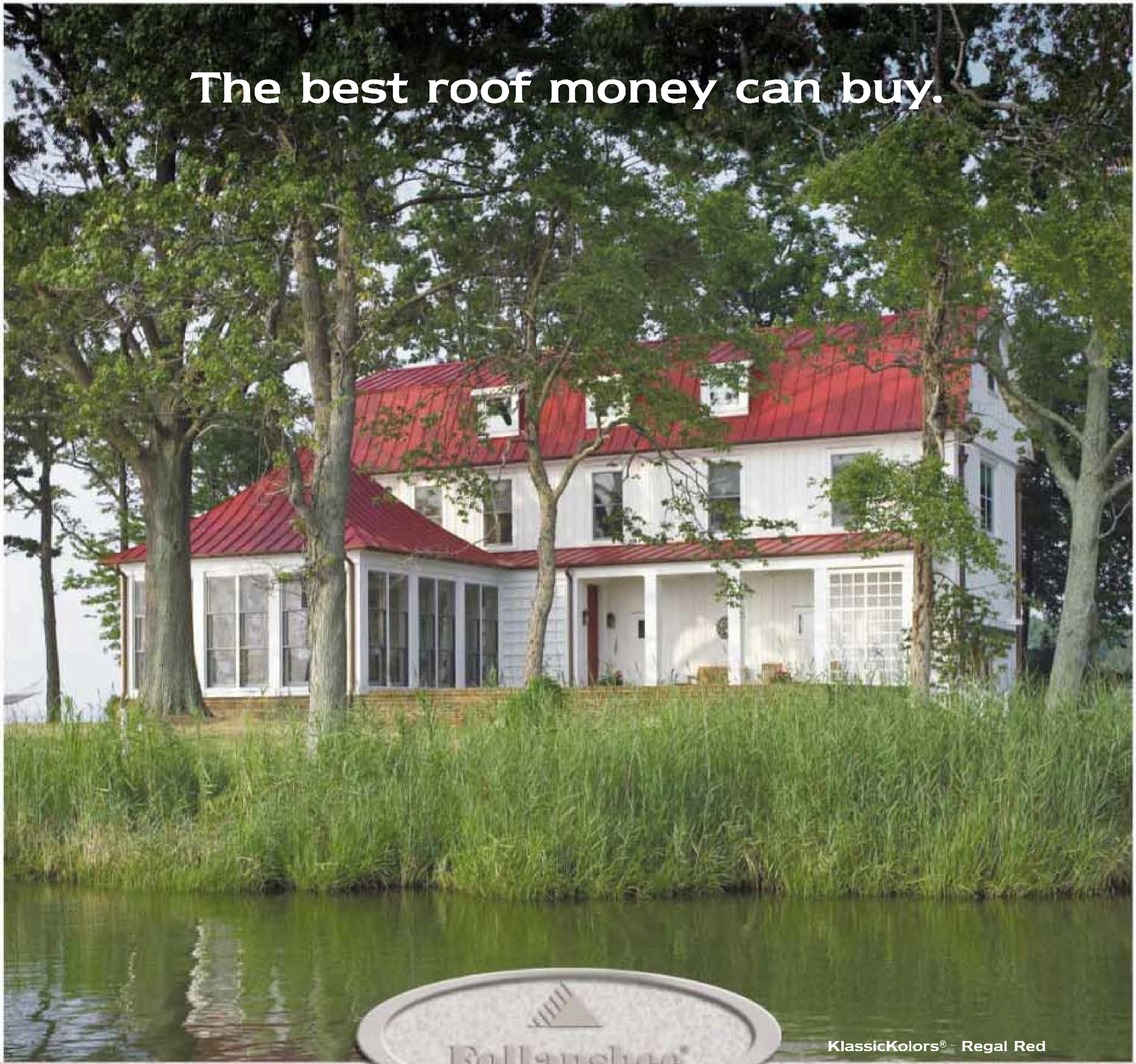

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Curiouser and curiouser: The strange case of the critic and the building

Critique

By Robert Campbell, FAIA

It's lazy summertime as I write this. Not a time for running around reporting on buildings. It's more a time for quiet reflection.

Here's one thought to chew on: What makes a great building? What is a "classic"?

Frank Kermode, who's often regarded as the greatest living literary critic in English, defines the classic in a surprising way. He says it's a work that can't be understood by any single internally coherent critical assessment. Every interpretation will fall short of fully comprehending it. There will always be something left over, something a little puzzling. That's how the classic remains alive. It stimulates each new generation to question it, to find a new way of seeing it. It's always demanding fresh interpretations because every one feels incomplete.

There are certain buildings that every generation feels a need to return to and reinterpret. The Tugendhat House. The Larkin Building. The Villa Stein at Garches. A classic is a building you can never quite get to the bottom of. If you ever thought you fully understood it, you'd begin to lose interest. It's the same with a poem. Another way of saying the same is this: When we ask whether a building, or any other work of art, is a classic, we are not asking only how good it is, we are asking how interesting it is.

I've always thought there are three criteria with which to measure the value of a work of architecture. It should be interesting, useful, and beautiful—in descending order. Interesting comes first.

When the scaffold falls away

Boston architect Gerhard Kallmann once expressed to me a similar idea about how interpretations change over time. An architect, he says, can't design without a theory. You need a set of beliefs. You can't make the pencil move without ideas. But the theories you use to design are like the scaffolding the contractor uses to get the building built. Once it is finished, the scaffolding falls away and the building stands alone. The theories that were necessary to its creation fall away, too, leaving the building naked, ready to be clothed, as the years pass, with entirely new theories and interpretations—interpretations that might astonish the original architect.

That buildings embody ideas is one of the things that makes them fascinating. But the ideas they embody change over time. As the critic Mark Wigley, now the new graduate architecture dean at Columbia, once put it: "The object makes redundant the theory that formed it."

Readers of this bimonthly column must know by now that I'm hopelessly literary. So here's another way of saying what Kallmann said. This is Emily Dickinson with her typically weird, notational, shorthand kind of poem:

The Props assist the House
Until the House is built
And then the Props withdraw
And adequate, erect,
The House support itself
And cease to recollect
The Auger and the Carpenter—
Just such a retrospect
Hath the perfected Life—
A past of Plank and Nail
And slowness—then the
Scaffolds drop
Affirming it a Soul.

I guess Dickinson's scaffolds are the physical human body that surrounds the soul. But buildings have souls, too. The thought is much the same.

Here's another slant on the issue of theory versus practice. Last year I held a fellowship at Columbia. There I happened to hear a talk by the university's president, Lee Bollinger. He wasn't talking to architects. He was talking to the School of Journalism. But I think what he said applies to architects, too.

Mies's Tugendhat House in Brno, Czech Republic, remains a classic after 74 years.

PHOTOGRAPHY: COURTESY THE MUSEUM OF MODERN ART

"Experts," said Bollinger, "think very deeply. As a result, they're always a little confused. The work of the journalist is to mediate between the confused expert and common sense."

Nothing could better describe the work of the architecture critic. Experts, God love them, are constantly wandering off the grid of common sense into realms of pure idea, pure theoretical principle, thus losing touch with anything that mat-

Contributing editor Robert Campbell, FAIA, is the Pulitzer Prize–winning architecture critic of The Boston Globe.

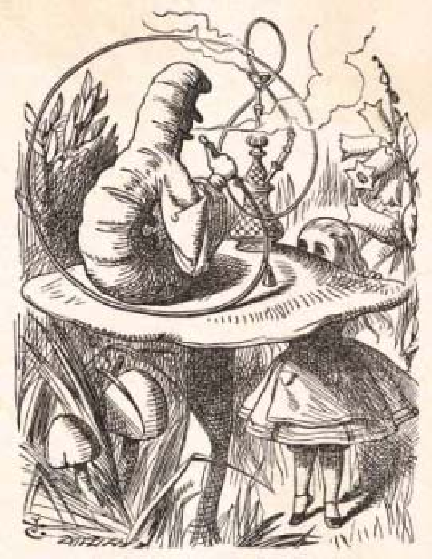
ters to anyone except themselves. When that happens, they begin to talk and write in ways nobody else understands. They use a language the real purpose of which is not to communicate, but rather to establish membership in a secret society of experts with private codes.

The great British novelist Doris Lessing puts it well in one of her autobiographies: “When principle is invoked, common sense flies out the window.”

A two-way bridge

The critic tries to build a bridge of understanding between the general public, who possess what you hope, at least, is common sense, and the architectural experts, who may sometimes prefer the empyrean atmosphere of pure theory. It’s a two-way bridge, of course. The public needs to learn from the experts at least as much as the experts need to learn from the public.

One more literary reference. I’ve always thought that a good model for any critic is Alice, the heroine of *Alice in Wonderland* and *Through the Looking-Glass*. Alice is constantly running into creatures who are crazy—the Queen of Hearts, the Mad Hatter, the White Rabbit—but they’re crazy in a special way. They’re obsessed by ideas, and they ignore real-world experience. They’re trying to make ideas and concepts do the work of experience. It’s a world of dysfunctional intellectuals who’ve lost touch with reality. Alice can’t help seeing through them. She has the common sense of a conventional person who sees things as they are. No doubt this little Victorian girl is entirely too conventional. There’s a place in the world for nuts and dreamers, of course. But the Alice books are a useful gloss on the folly of trying to live by ideas alone. Alice isn’t fooled or overly impressed by her crazies, and neither should any critic be.



Alice, like critics, runs into strange experts.

IMAGE: © BETTMANN/CORBIS

Does any reader doubt that architecture today has its share of White Rabbits and Mad Hatters (I’m not going to say who is which), dysfunctional intellectuals who prowl a lonely world of ideas, rather than the world of human experience?

As noted above, buildings are fascinating from the point of view of the ideas they embody. Its openness to new interpretations is one of the things that makes a building a classic. But when each generation’s new scaffold of interpretation falls away, the building (or urban space, garden, or whatever it is) remains a place for human habitation. A building isn’t primarily a text. It’s primarily a place. And in evaluating its success as a place, common sense is still a pretty useful guide.

It’s a critic’s job to stay in touch with both the world of high ideas and the world of common sense and, as President Bollinger suggests, mediate between them—and hopefully, from time to time, introduce them to each other. ■

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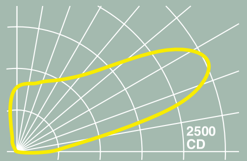

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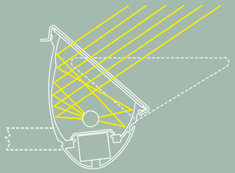

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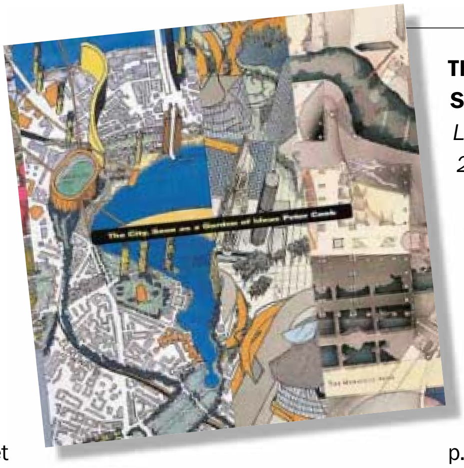
Books

The City, Seen as a Garden of Ideas, *by Peter Cook. New York: The Monacelli Press, 2003, 188 pages, $65.*

In this age of slick CADD imagery, Peter Cook's architectural drawings are ebullient and willfully anachronistic. Like backdrops for the movie *Yellow Submarine*, they often feel cartoony rather than compelling. Yet as the glow of many of his contemporaries has faded, the designs of this self-described "futurist-optimist," who was a founder of England's Archigram group in 1960, may be more in vogue than ever. (Witness the fanfare surrounding his Kunsthaus in Graz, Austria, a museum that made the cover of RECORD in January and has a look that Cook likens to "a knobbly but sleek-skinned cocoon.")

This book, whose ostensible focus is 40 years of the architect's mostly unbuilt designs, offers some clues to Cook's ongoing relevance. There are fjordlike towers in Oslo and a bank in Hamburg with what seem to be lips for a cornice. But if his designs trade in whimsy, his take on reality is grounded: He's an uncommonly perceptive observer of the world around him, with a talent to translate impressions into prose.

Cook also understands, as few architects do, that over time major cities accrue a physical personality that is far more nuanced than what can be reduced to a set of design rules or a checklist of landmarks: "They drift and sag, they change internal patterns of allegiance. They dream up places of significance, often without the help of architects." And when architects do get involved? The result is the artificial urbanity now popping up in one affluent suburb after another: "They reproduce the tapestry, they keep the music sweet, like the elevator Muzak that you just recognize as Beethoven with the loud bits orchestrated out."



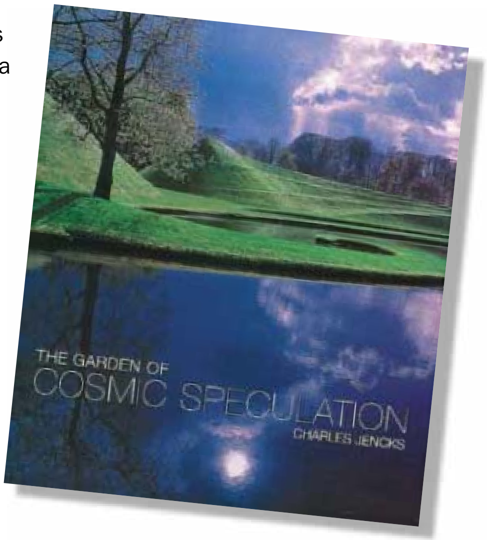
Now that technology can build the whimsy of the Graz Kunsthaus in sleek acrylic and glass, Cook seems determined to push even further toward fanciful polemics. He ends the book with "the city under the trees"—Super-Houston, a new vision for the sprawl beyond sprawl. It is Pop Art at regional scale, with feather-shaped "darts" looming over freeways and a multistory "liner" separating the sprawl from the outer countryside and housing that Cook promises will "be more Houston than Houston … schmockey [sic] in every way." Whatever. The impression that lasts is of the discerning urbanist, not the ironic provocateur—and that is what makes the book so good. *John King*

The Garden of Cosmic Speculation, *by Charles Jencks. London: Frances Lincoln, 2003, 256 pages, $60.*

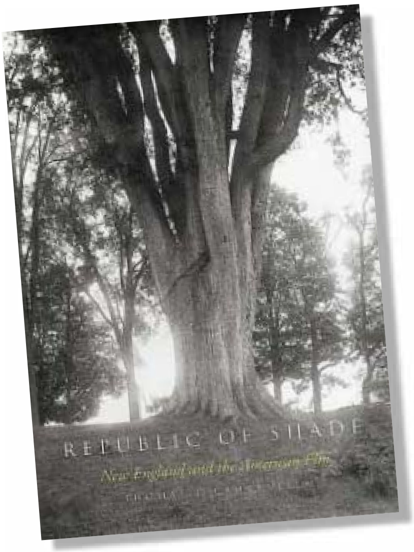
Charles Jencks likes going out on limbs. Twenty-five years ago, in his book *The Language of Post-Modern Architecture*, the designer, architecture critic, and provocateur dated the death of Modern architecture to 3:32 p.m. on July 15, 1972, when the Corbu-inspired Pruitt-Igoe housing development in St. Louis, deemed no longer habitable for its low-income tenants, was dynamited into history. Ten years ago, in *The Architecture of the Jumping Universe*, he advanced the intriguing, if still singular, polemic that contemporary architecture could be understood within the context of emerging ideas in complexity science and chaos theory. Now, in *The Garden of Cosmic Speculation*, he invites us to see how recent theories of cosmogenesis have been brought to life on 30 acres that he owns in the Borders area of Scotland.

The book weaves together with some success three disjunctive narratives: personal history, unfolding conceptions of the universe, and what Jencks calls "questioning design." *The Garden of Cosmic Speculation*, begun by Jencks and his late wife Maggie Keswick in the late 1980s, initially expressed ideas about geomancy inspired by Keswick's lifetime study of Chinese gardens. As later elaborated by Jencks in the years since Keswick's death in 1995, the garden has become a "miniaturization and celebration" of patterns now seen to underlie all life, including the self-organizing spirals of human DNA, hurricanes, and galaxies; the self-similar shapes of waves and clouds; and the irregular geometries of fractals and black holes. Jencks presents the various ways these ideas have been given expression in landforms and sculptures in his garden, in the conviction that scientific discoveries can't be broadly assimilated into culture until given visual form. One long section of the book, for instance, tells how he designed a "universe cascade" with platforms and steps to suggest the sudden jumps to ever-higher levels of complexity that characterize the history of the cosmos.

As intertwined personal and intellectual narratives and as self-conscious explorations of the way scientific theory might impel design,



both Jencks's garden and book are deeply anomalous in the context of contemporary design. Though they strain at times to illustrate ideas almost beyond the limits of visual representation (who should paint the face of God?), both landscape and text are Jencks at his provocative best, scanning science for an iconography suitable to the new cosmology.
John Beardsley



Republic of Shade: New England and the American Elm, *by Thomas J. Campanella. New Haven and London: Yale University Press, 2003, 240 pages, $35.*

"Smaller plants may feed and sustain us, but in trees we see ourselves," writes Thomas Campanella in the introduction to his cultural history of the American elm. In tracing the rise of *Ulmus americana* from scrappy bottomland survivor to national icon, Campanella introduces a tree with a Horatio Alger trajectory and a boundless capacity to reflect America's democratic zeal and self-improving aspirations.

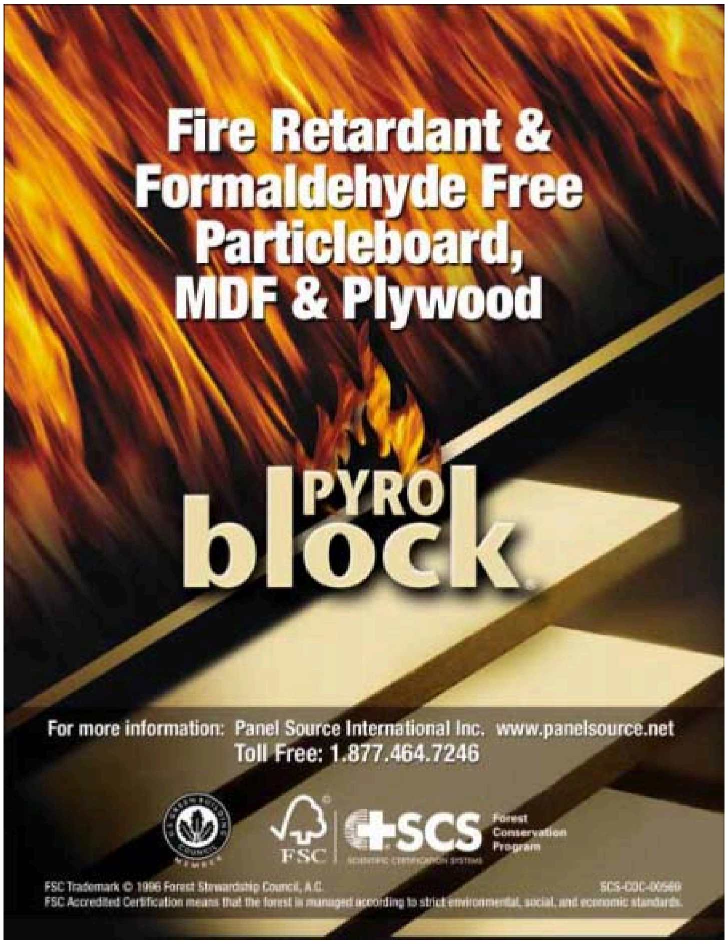
When Europeans arrived in the New World, the American elm dominated New England's soggy lowlands, where it had survived the fires native people used to clear terrain. Though its bark yielded medicinal benefits, the elm's stringy wood made it useless for building, and it was backbreaking for the settlers to cut. Spared the ax, and often planted in pairs in front of new homesteads, towering elms became the most visible feature of the early New England farm landscape. The stage was set for iconic status: "In time," Campanella writes, "this remnant of the native forest emerged as the very essence of Yankee pastoralism."

Because the elm thrived in river valleys, which also offered the best farmland, the tree's ascendancy followed the region's central river systems: the Housatonic, the Merrimac, and the Connecticut. Between the 18th and early 20th centuries, the cult of the elm spread from southern New England to the rest of the nation.

This proliferation was spurred by the village-improvement movement of the 1850s, which enshrined the elm-lined street in America's towns and cities. Like many other Yankee exports—the Cape Cod house, the village green, the white church spire—the elm came to symbolize conquest of the wilderness, domesticity, democracy, and all their attendant moral virtues. It also bestowed architectural order and scale, shade and shelter.

The elm's long reign came to a crashing end with the arrival of Dutch elm disease in the 1930s. This "fungal interloper," spread by the elm bark beetle, decimated America's elms and streetscapes by the 1970s. Campanella reminds us that pest-fighting sprays exposed elms to copious amounts of DDT, giving rise to an even greater ecological disaster. In an epilogue, he documents lessons learned from the pandemic, the research to develop disease-resistant varieties of *Ulmus americana*, and the movement to restore hardier elms to city streets.

Republic of Shade is grace-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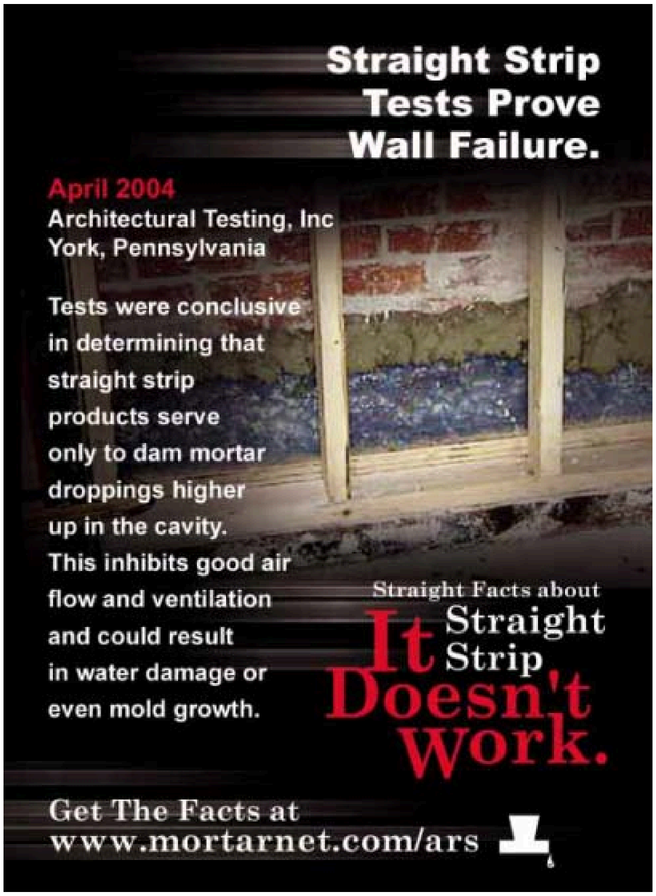
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COMPOSITES GUREA

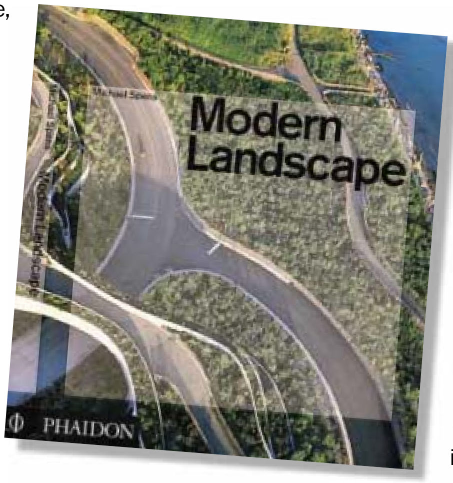
fully written, elegantly designed, and Campanella's annotated text is illustrated with dozens of historic photographs. Above all, *Republic of Shade* gives form and substance to the elusive concept of cultural landscape history. Campanella illuminates beliefs and yearnings that extend to far more than America's love affair with elms, and his fascinating book deserves an audience as broad and enduring. *Jane Roy Brown*

Modern Landscape, *by Michael Spens. London: Phaidon Press, 2003, 240 pages, $75.*

Increasing urbanization and concerns about sustainability have spawned growing interest in landscape design. At the same time, author Michael Spens insists there has been "little new discussion on the subject." That's one reason why landscape architecture deserves the kind of careful scrutiny that Spens aspires to give it in *Modern Landscape*. An architectural writer currently teaching at the University of Dundee, Scotland, Spens has written monographs on Geoffrey Jellicoe and Alvar Aalto. *Modern Landscapes* presents 32 carefully selected projects in four categories: parkland, architecture as landscape, garden landscapes, and urban interventions.

Spens examines significant new ventures in landscape architecture, including efforts to improve infrastructure (Danadjieva & Koenig Associates' West Point Wastewater Treatment Plant in Seattle), reclaim abandoned industrial sites (Peter Latz & Partners' Landscape Park in Duisburg-Nord, Germany), and generate new urban design typologies (West 8's Borneo Sporenburg Housing in Amsterdam). At the same time, he acknowledges the continuing vitality of more traditional garden forms. Beautifully produced, his book is international in scope; it even includes Japanese projects by Toru Mitani and Hiroki Hasegawa of Studio on Site, Tokyo.

But apart from informative project descriptions, his book does not add much to the discourse. His larger conceptual framework is remarkably weak. Spens describes Modernism as a "timeless category," though others would call it a historical episode. He conveys little clear sense of what he means by Modern landscape, other than to suggest that it is vaguely linked to notions of scientific and social progress and inspired by art, from Cubism to Minimalism and Land Art. Indeed, he turns to a distinctly premodern concept for guidance: "It is to Arcadia … that we look in this new century for the possibility of fulfillment." His discussion of architecture-as-landscape is overly reliant on a notion of placeform; it falls far short of the analysis found in Anita Berrizbeitia's and Linda Pollock's book *Inside Outside: Between Architecture and Landscape* (1999). Spens could also have used a more careful edit: In his introduction, for instance, he misspells the names of Isamu Noguchi and Bernard Tschumi. Landscape architecture deserves better than it gets in this book. *J.B.*



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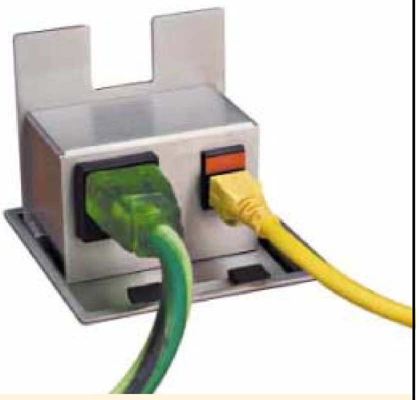

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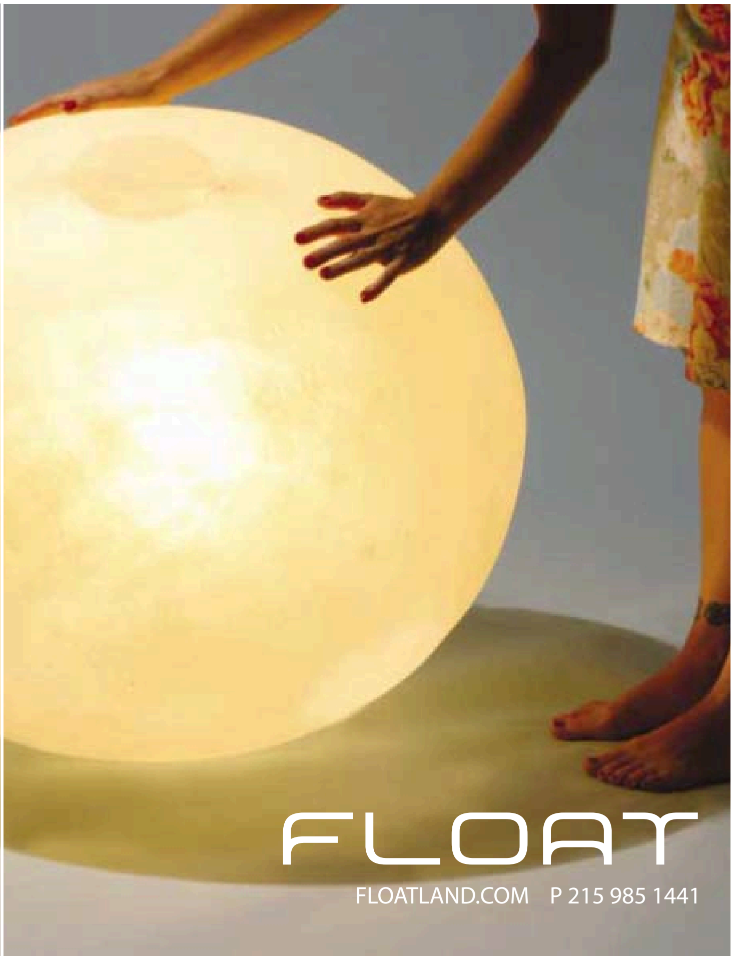

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A show salutes the skyscraper, rising to new heights everywhere

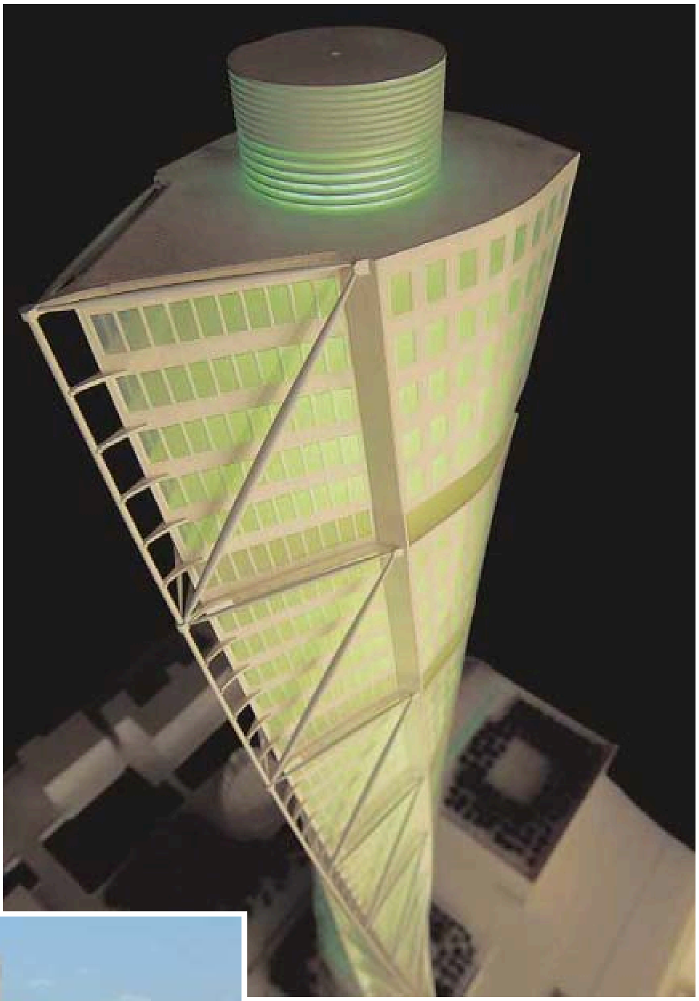
Exhibitions

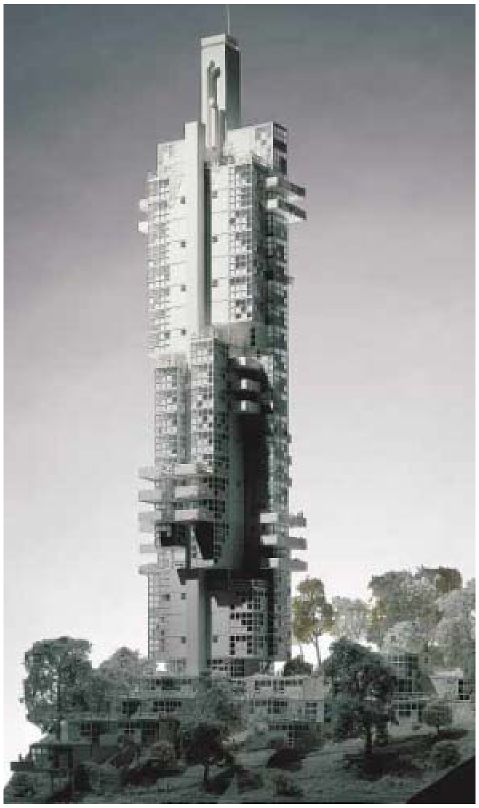
By Deborah Snoonian, P.E.

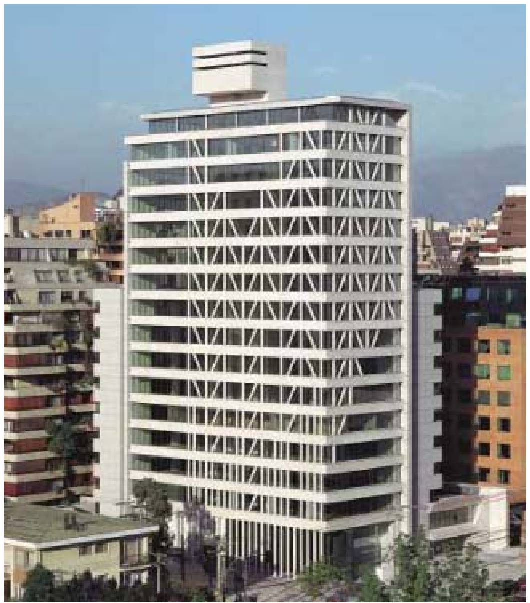
Tall Buildings. *Curated by Terence Riley and Guy Nordenson. At The Museum of Modern Art, Queens, New York, through September 27, 2004.*

In Steven Millhauser's 1997 Pulitzer Prize–winning novel *Martin Dressler*, the title character, who evolves from bellboy at an upscale Manhattan hotel to renowned developer in the early 20th century, admires a view of the city from the roof garden of his flagship hotel—"a world of open pits and blasted rock … [where] the avenues had begun to erupt in strange, immense growths: modern flowers with veins of steel, bursting out of bedrock." Such fervor still surrounds skyscrapers today. Tall buildings are not going away, as the post-9/11 nattering might have had it—they're being erected in more cities than ever. MoMA's exhibition *Tall Buildings* pays homage to height, featuring 25 built and unbuilt projects from the past decade.

The curators, MoMA's Terence Riley and structural engineer Guy Nordenson, chose projects that speak to the themes of technology, urbanism, and program. Of these, technology seems first among equals. With complex analyses of structure just a few mouse clicks away, architects and engineers have envisioned buildings that twist, lean, and warp their way into space; many also feature the increasingly popular "diagrid" facade, with structural members that deviate from the horizontal and vertical to provide







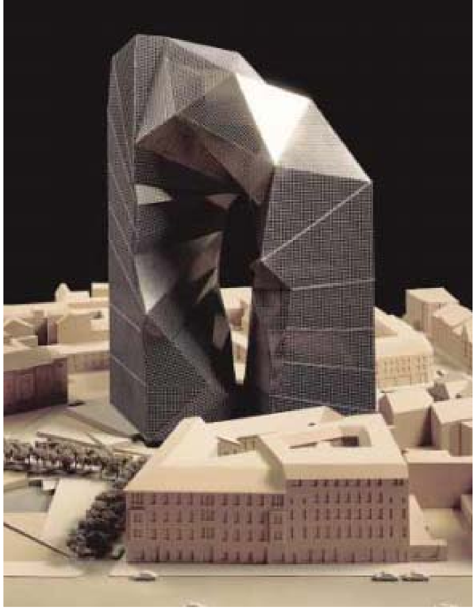
Richard Rogers's proposed tower for Korea (far left) comprises preassembled components for affordable housing. Diagonal bracing resists torsion at the Edificio Manantiales (left) in Chile, by Luis Izquierdo, et al. Calatrava's Turning Torso (above) in Sweden, rotates 90 degrees in a rise of 523 feet.

IMAGES: COURTESY RICHARD ROGERS PARTNERSHIP (LEFT); SANTIAGO CALATRAVA (RIGHT); © GUY ST. CLAIR (MIDDLE)

lateral and torsional stability. Designers such as Norman Foster (Swiss Re, London) and Ken Yeang (the unbuilt Elephant and Castle Eco Towers, also in London) harness tech savvy in the service of resource efficiency, analyzing wind patterns, sunlight, and air circulation to create skyscrapers with interior gardens, natural ventilation, and ample daylight. Powerful PCs and cheap software have put once-impossible design feats within reach.

Aside from the tech angle, the exhibition may frustrate those who want to learn how the buildings relate to one another. Whereas the show's excellent Web site enables these comparisons, the gallery layout encourages individual browsing, not collective reflection. Projects are grouped by actual building height, which makes little sense because the physical models are all roughly the same size. Grouping by theme or even form would have been more instructive. Something's gained by pairing, say, Eisenman's unbuilt Max Reinhardt Haus in Berlin (top right) and Rem Koolhaas's CCTV building in Beijing—both "loops" that connect at the lowest and highest levels—and learning that their structural systems are different.

Tall Buildings is a New York show, born out of conversations that followed the destruction of the Twin Towers. The absence of the final plan for the Freedom Tower, both striking and understandable, underscores how contentious its design has become. And to see a few of the entries here by finalists for the competition is to realize anew the power of their metaphors. Each of the three schemes shown proposed multiple towers whose structural integrity depended on horizontal connections among them. Stronger together than apart, in other words—a feature that resonates with a city whose denizens are still coming to grips with loss. ■



Peter Eisenman conceived the Max Reinhardt Haus (above) in the early 1990s as a symbol of unity for a new Berlin. Renzo Piano's spirelike London Bridge Tower (right) is one of several high-rises planned for a city once hostile to skyscrapers.

IMAGES: COURTESY JOCHEN LITTKEMAN/EISENMAN ARCHITECTS (LEFT);
RENZO PIANO BUILDING WORKSHOP (RIGHT)

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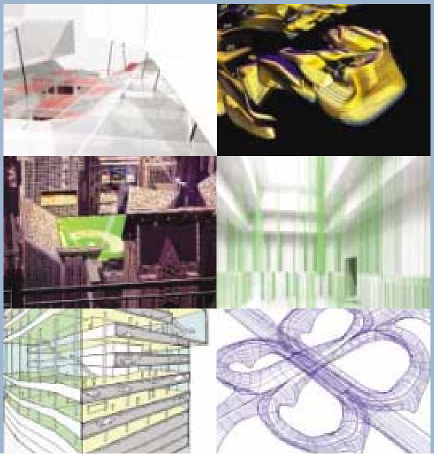

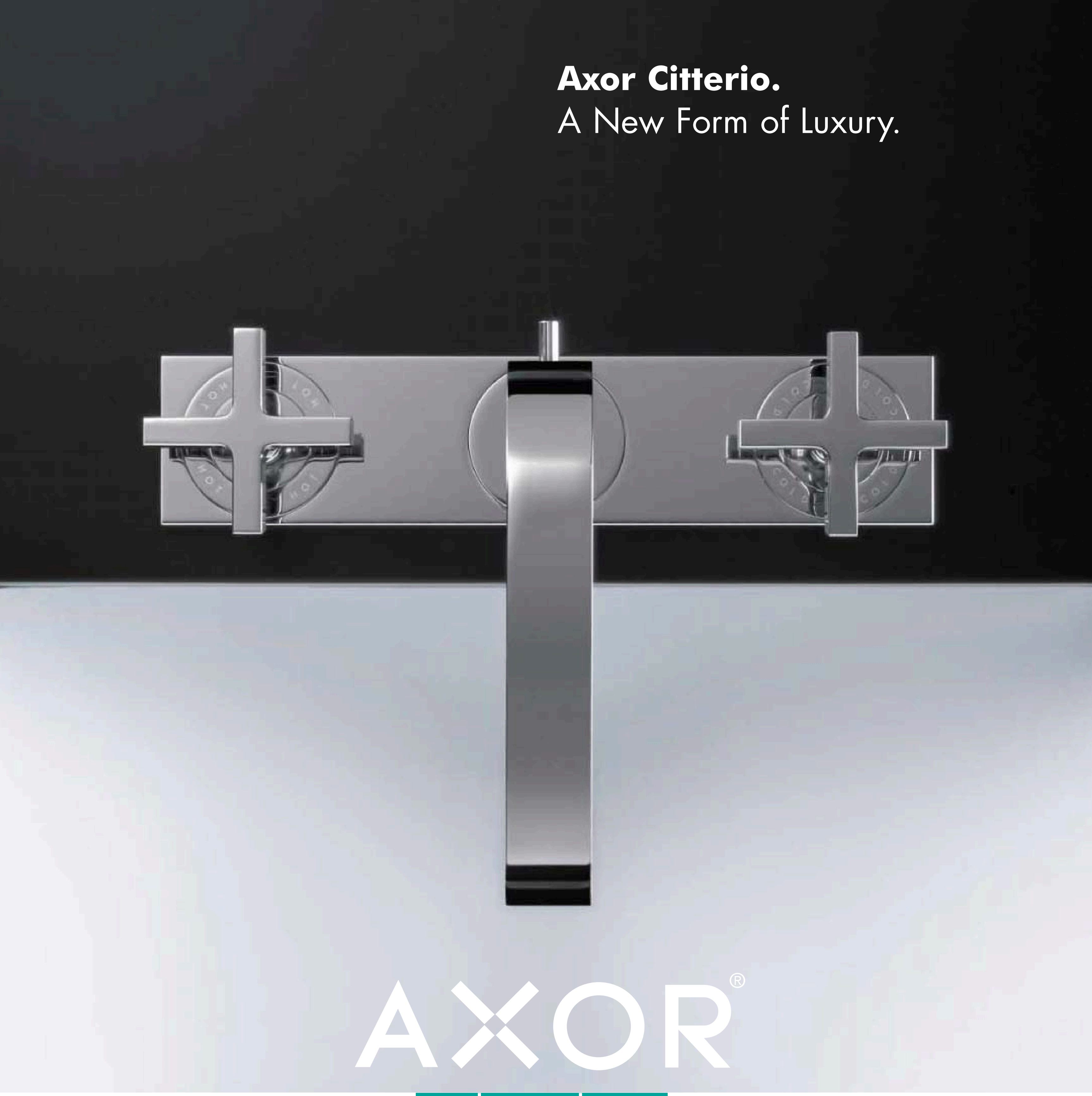

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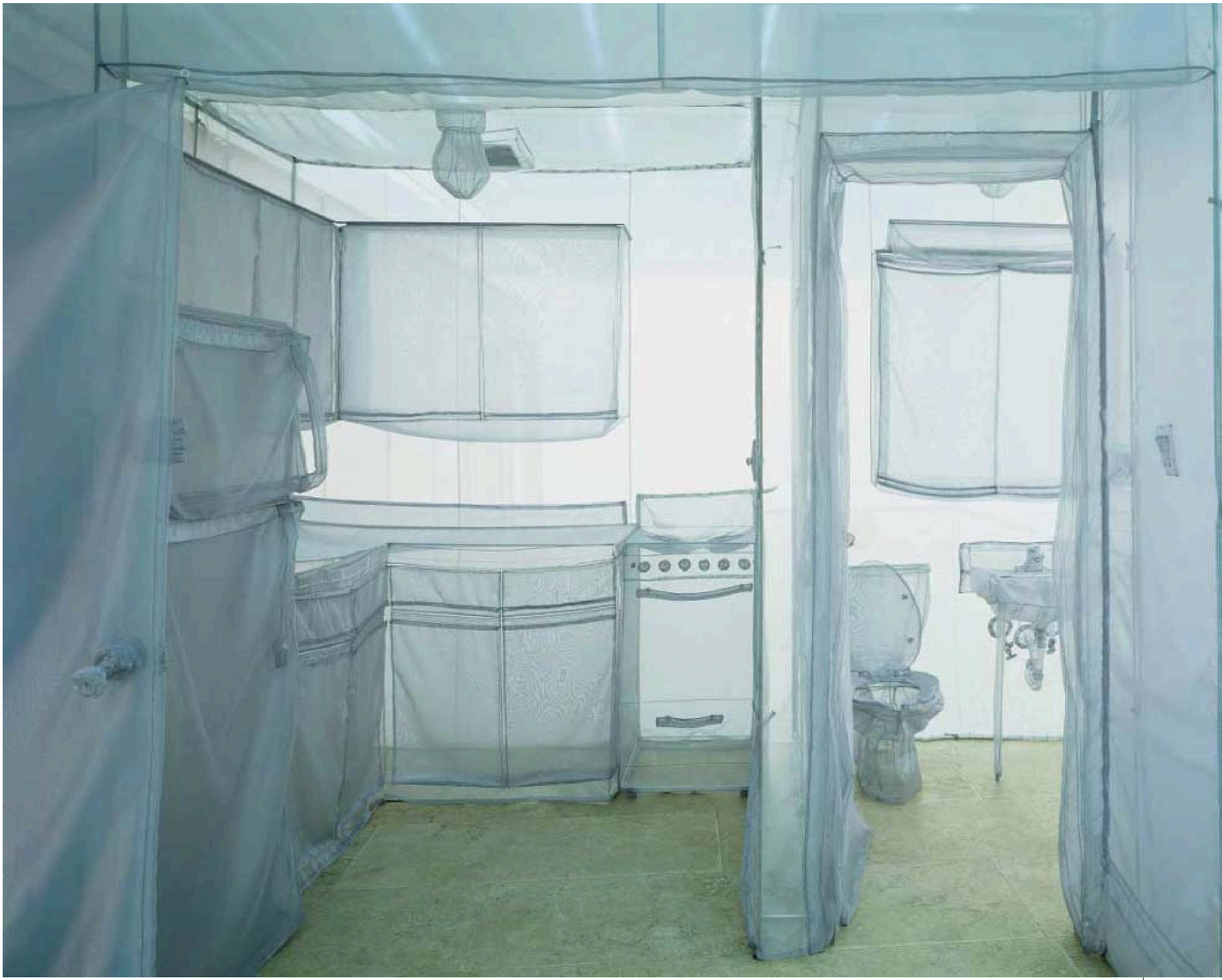


PHOTOGRAPHY: COURTESY THE ARTIST AND LEHMANN MAUPIN GALLERY, NEW YORK CITY

By Sara Hart

Sheer walls (and fixtures) evoke a ghostly architecture

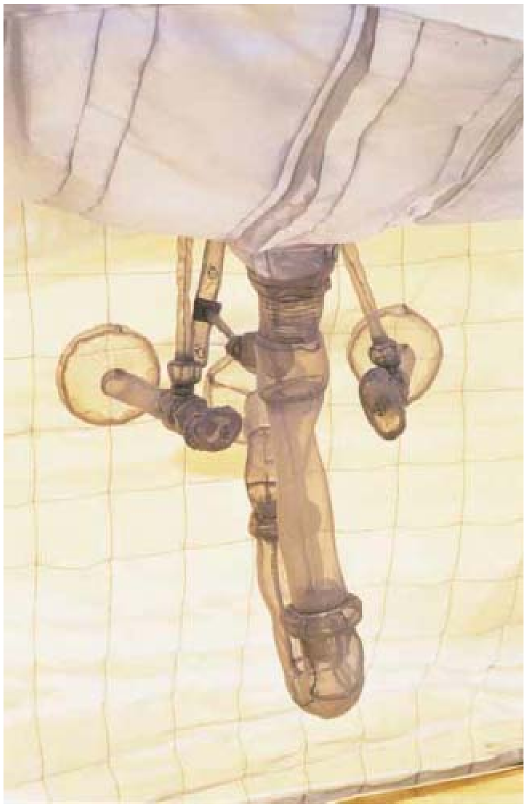
Korean-born Do-Ho Suh is an artist of unusual range. His site-specific installations focus on many subjects—cultural identity, ethnic values, collective consciousness—in a variety of media, including resin, fabric, thread, and rubber. Because he lives in two cities and two cultures, the United States and South Korea, he seems to struggle with the psychic vertigo that the culture shock brings him. A part-time New York resident, he exhibits his installations around this country but fabricates most of the pieces in his other home, Seoul. As someone of two worlds, Suh has found a way to transport a facsimile of the place he's left to the place he currently occupies.

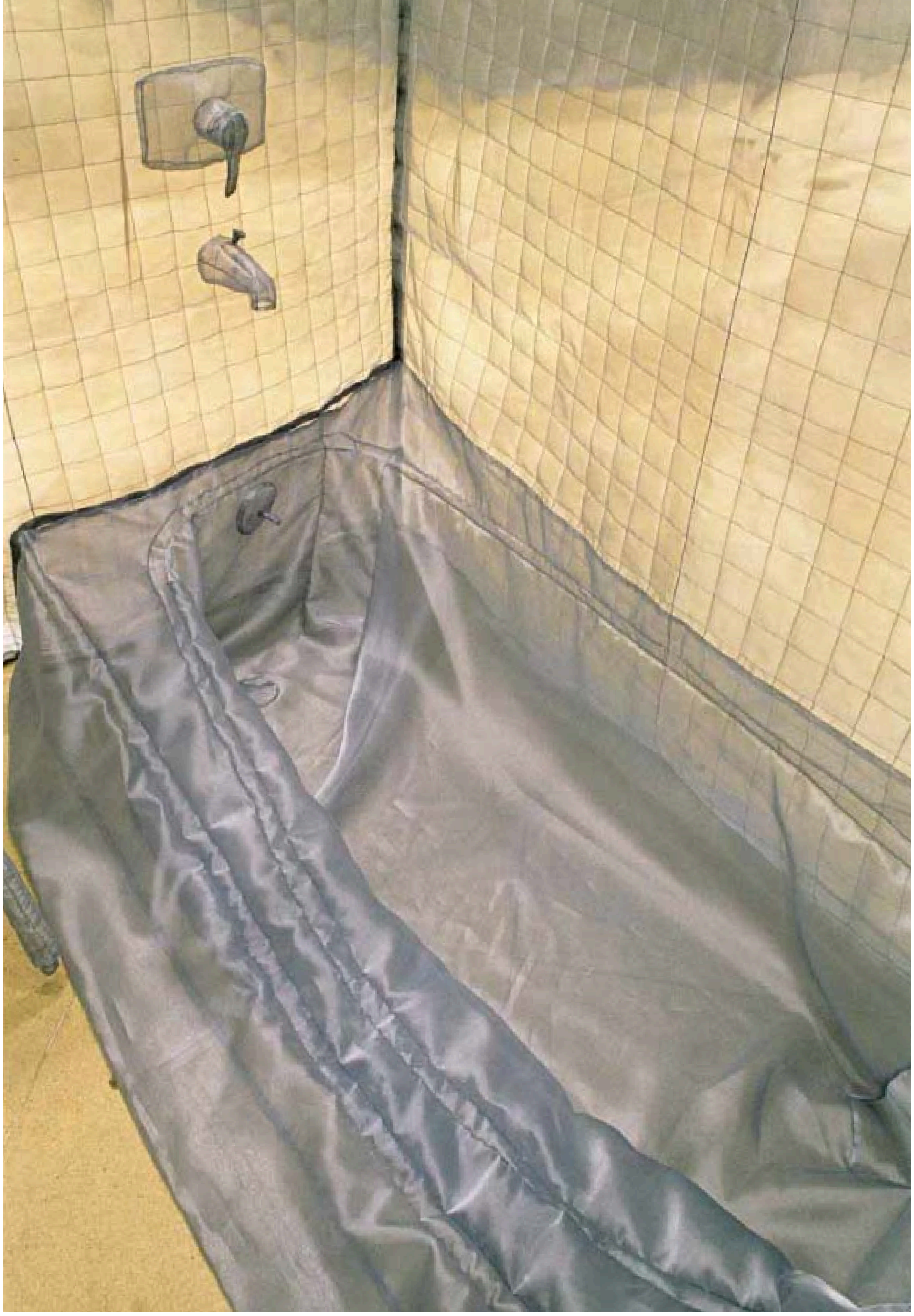
In 1999, the artist began making full-size replicas of his dwellings in Seoul and New York. He recreated every detail and fixture—toilets, light switches, cabinetry, bookshelves, and even appliances. In architectural parlance, these structures might be called 3D as-builts, but usually such pieces merely represent the existing reality of a place. Suh, by contrast, has invented a parallel universe out of translucent fabric.

348 West 22nd St., Apt. A (2001) is the full-scale replica of Suh's apartment in Manhattan's Chelsea neighborhood. First, he measured and recorded the entire place. Then he devised sewing patterns, from which seamstresses in Seoul fabricated every element in the apartment out of gray nylon.

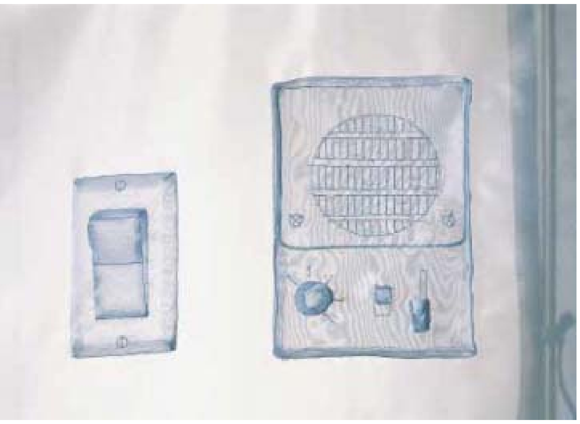
The experience is not unlike some dream sequence in which reality—in this case, the reality of structure, material, and texture—has been drained, leaving only a gauzy, ghostly memory. Some visitors, especially architects, will find *Apt. A*'s interiors limp, sad, and vulnerable. Others will simply immerse themselves in the hallucination. Fortunately, the floor retains its solidity and strength, grounding the experience and reminding visitors that the dream is, in fact, an art installation. The work remains an intellectual commentary on the psychological comfort of familiarity.

Suh's other similar investigations are perhaps more sensual and less haunting. He also stitched a likeness of his childhood home in Seoul in green silk organza and made *Staircase* (2003), a red nylon interpretation of 348 West 22nd Street's stair, currently on view at the Arthur M. Sackler Gallery in Washington, D.C. (through September 26). *Staircase* dangles from the ceiling, hovering inches above the floor. It is more sculptural than spatial, which by comparison makes *Apt. A* all the more visceral. ■





Every element of Do-Ho Suh's Chelsea apartment is recreated full-scale and in a gray nylon—plumbing fixtures, wall plates, and the bathtub.



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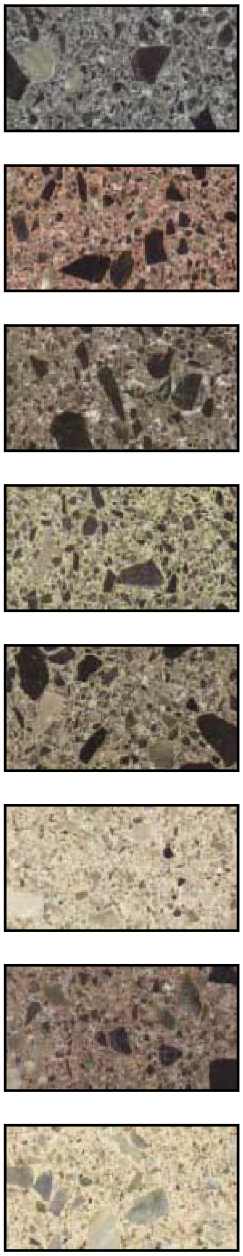

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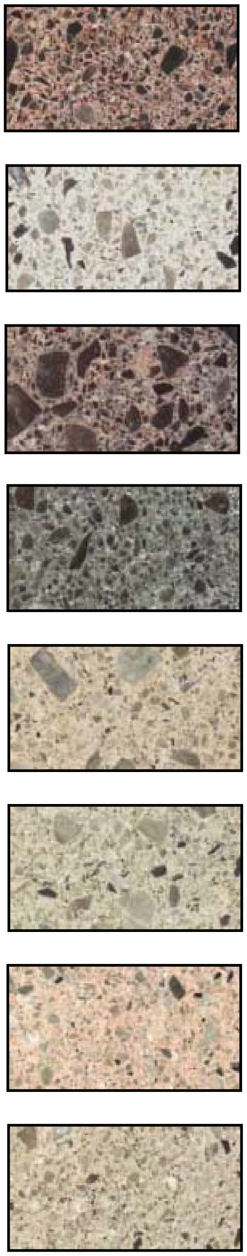

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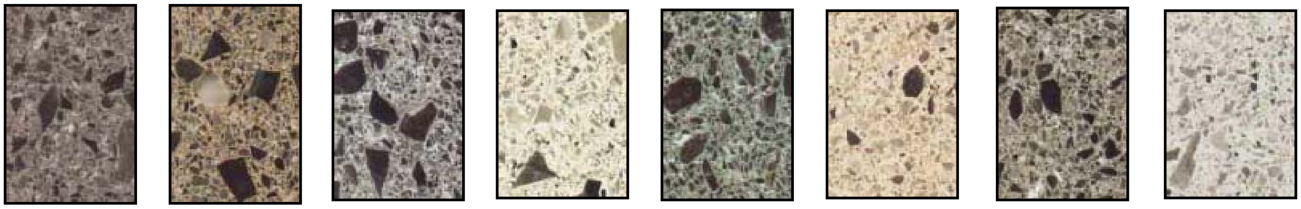

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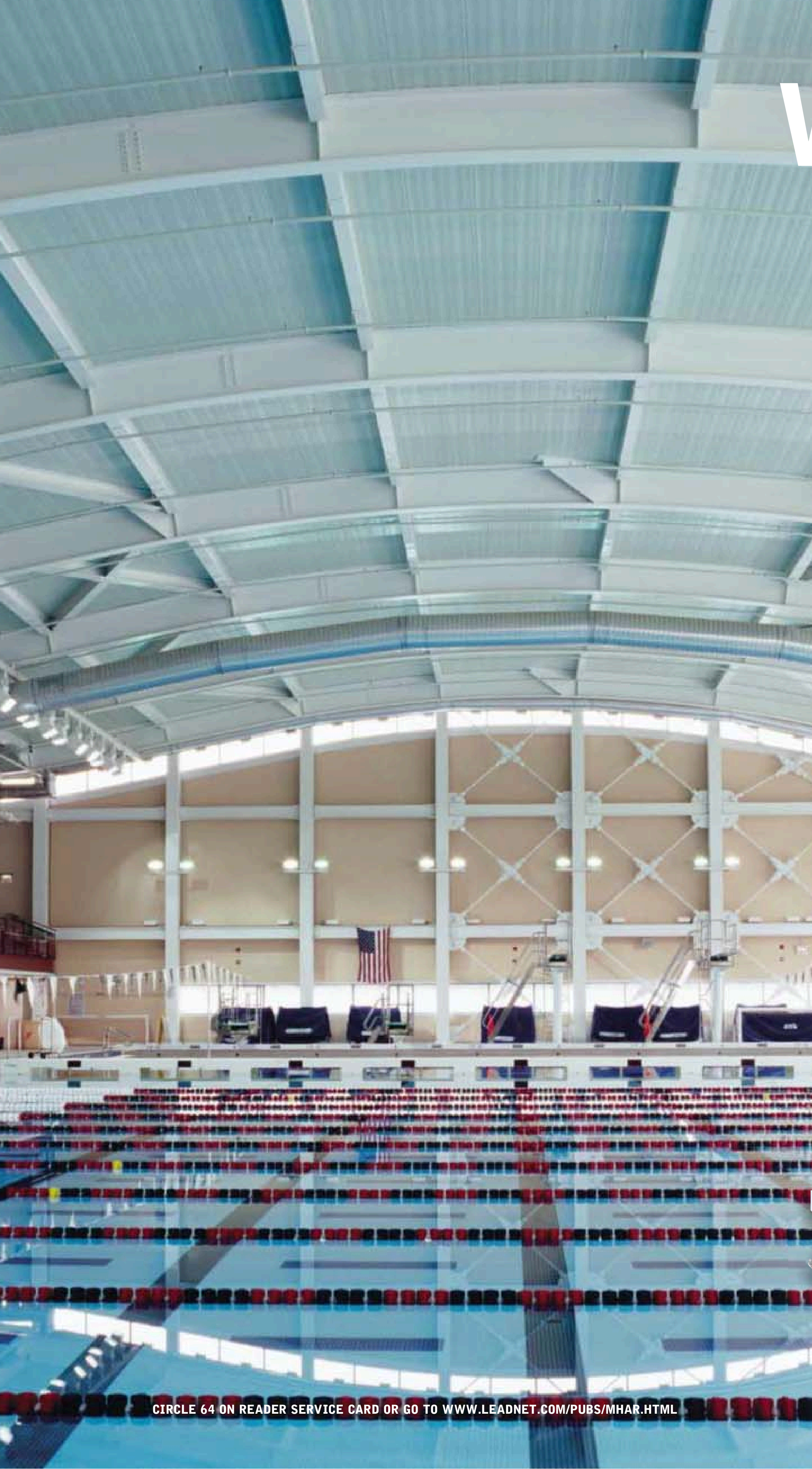

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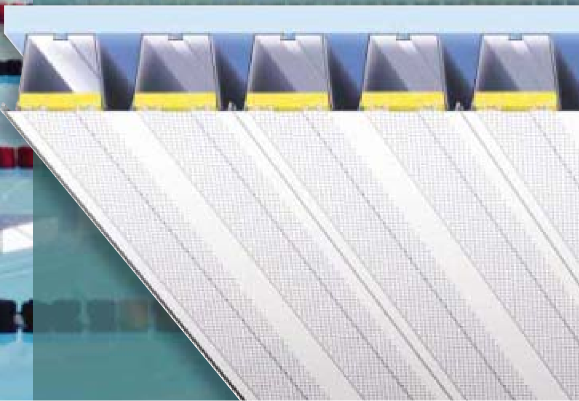

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Shallow Space

The Art of Dressing Windows

By Thomas Hine

Store windows are shallow, unreal rooms inhabited by petulant mannequins. But show-window display is much, much more than interior design for dummies.

For more than a century, it has been a major cultural force that shaped people's experience in the modern city. And today, even though imaginatively designed windows play only a small role in a world of big-box stores, shopping malls, and global chains, window designers continue to provide unexpected angles, provocative views, ambiguous tableaux, and fresh attitudes that draw passersby into their stores, and

Thomas Hine, an architecture critic, is the author of I Want That! How We All Became Shoppers *(HarperCollins, 2000).*

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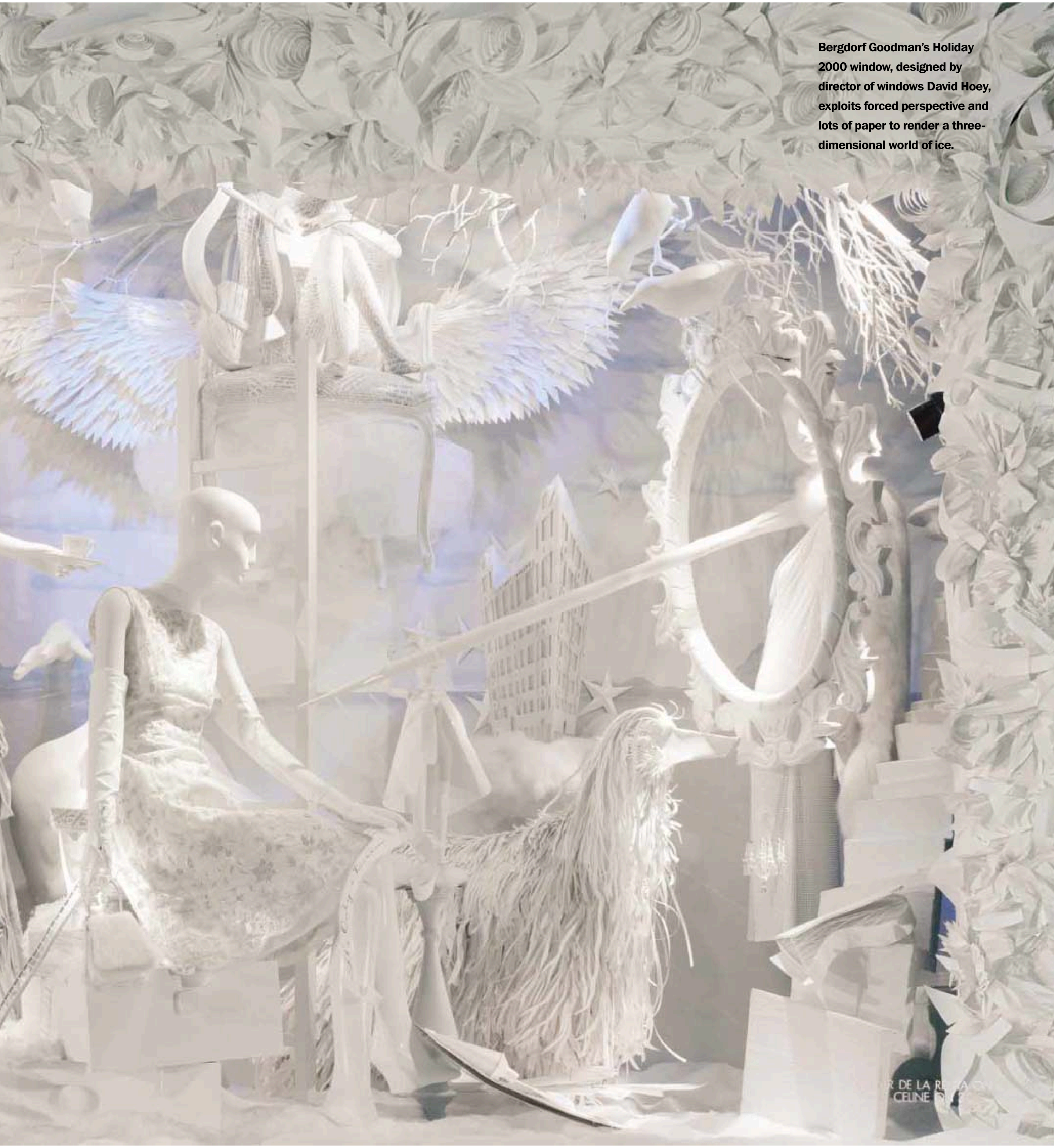
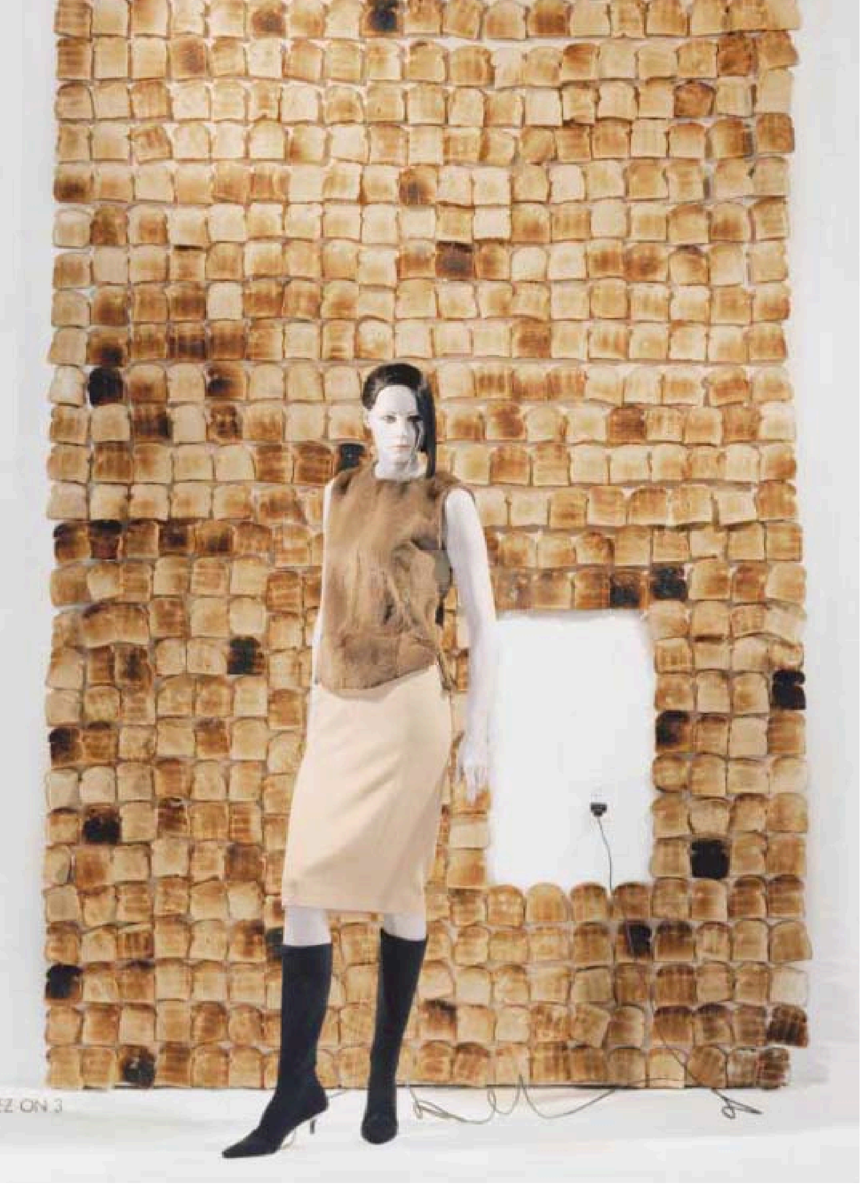


Bergdorf Goodman's Holiday 2000 window, designed by director of windows David Hoey, exploits forced perspective and lots of paper to render a three-dimensional world of ice.



Small-scale artifacts are used to yield remarkable large-scale effects. In the summer of 2000, Bergdorf's David Hoey created a wall of pieces of toast for the store windows (left). Last spring, he formed a floor-to-ceiling bas-relief out of wigs and hair accessories (opposite). Another window (below left) shifts scale with a giant photo of a wig.

more important, into the spectacle of the moment. In parts of Manhattan, Paris, Tokyo, London, and a few other cities, store windows remain beacons of style, color, and compositional ideas.

Window design is a labor-intensive, improvisatory craft whose practitioners are part artist, part tailor, part collector, part editor, always on top of the latest sensation. They must come up with new ideas constantly. At New York City's Bergdorf Goodman, for example, a staff of five, headed by the director of windows, David Hoey, and augmented by an extensive network of freelancers, designs and installs 350 different scenes each year. Generally, each one stays up for one to three weeks. "Bergdorf's, over time, has developed a certain character," says Linda Fargo, vice president for visual presentation and image at the store, "and in the windows, we express and explore that, and sometimes push it in new directions. The store's windows are like a person's eyes, the first thing you look at."

Bergdorf's uses every trick in the art history book, from Baroque flamboyance to stark Minimalism, to draw the public into its materialist reveries. Sometimes the installations even shift gravity, giving an observer bird's-eye views of the opulent life that show both the pleasures of indulgence and the resulting hangover. A few blocks away, at Barneys New York, on Madison Avenue, the vitrines are often virtual oratorios of clutter, filled with merchandise, flea-market finds, photographs, and text written on the glass. These artfully composed sets designed by the store's creative director, Simon Doonan, tell viewers what they already know: They have too much stuff, but having more stuff is really cool.

Store windows are in one sense interiors, simply because they are within the envelope of the building. But as they tempt pedestrians into becoming voyeurs, they are also of the street, often doubling the images of surrounding buildings, traffic, and crowds.

The glazing becomes a mirror that draws you through the looking glass. Can you see yourself in these clothes, carrying that bag, wearing those shoes? Indeed, your reflection asks whether you can envision yourself as part of the world depicted across the pane. In an increasingly branded and global market, the seemingly primitive device of the showcase also gives a retailer a subtle way of defining itself this week, in this neighborhood, for these people.

You may well find the scene in the window to be repulsive or cruel, as at Barneys New York recently, where the word *Joy* was dramatized by mannequins in hooded Issey Miyake raincoats pushing each other to the ground. For the upscale specialty stores that present the

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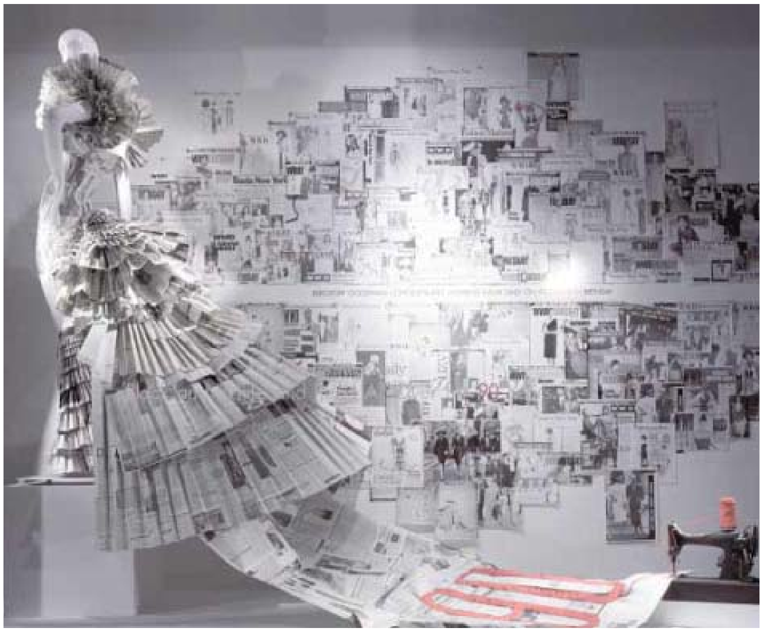

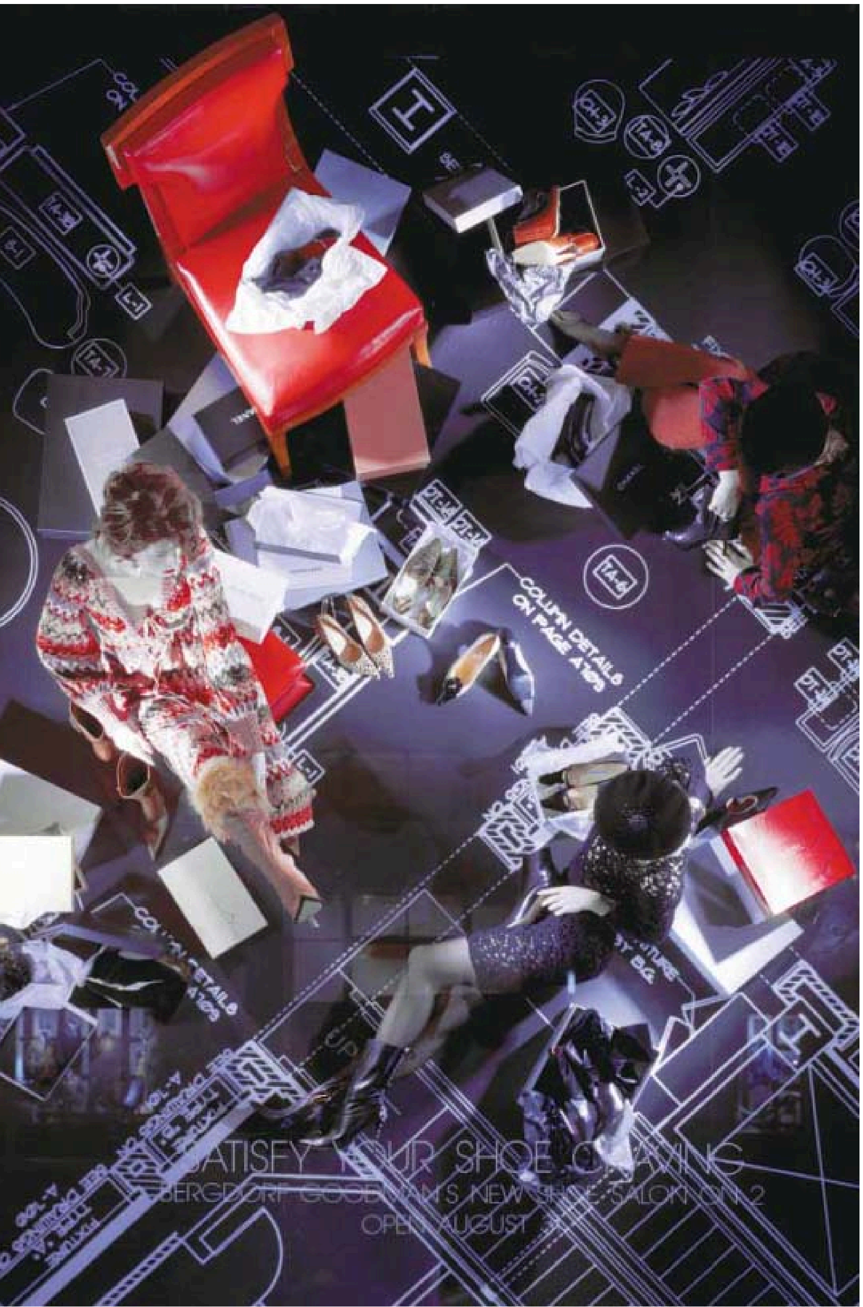
COLUMN DETAILS ON PAGE A1.0
SATISFY YOUR SHOE CRAVING
BERGDORF GOODMAN'S NEW SHOE SALON ON 2
OPEN AUGUST

David Hoey worked with layering, scale, and collage for a Bergdorf's window in the summer of 2001 featuring a newsprint dress (top). When the shoe salon opened the following summer, Hoey hung the enlarged floor plan as a backdrop in a window, and mounted mannequins and objects (left) in a play on axonometric perspective.

most exciting concepts, such dissonance is entirely intentional. As Simon Doonan has put it, "Snotty and esoteric windows can close the door to unwanted pedestrians and snuff out undesirable desire. If that doesn't work, get a buzzer."

Gene Moore, who first designed windows for Bonwit Teller in New York, and then for 36 years at Tiffany, and is probably the most influential designer in this field, said that windows must "abrade the awareness of the audience." He achieved this most often at Tiffany by contrasting humble materials and rough surfaces with precious objects. He threw jewels into sand and hung diamond rings on a rope. Another designer, Candy Pratts Price, brought a distinctive face to Bloomingdale's Manhattan store in the 1970s. Like a comic strip, her windows told stories reflecting the sexual mores and drug use of the time and accomplished a feat that hasn't been repeated: making a department store appear exciting to the young.

The spaces in which window designers work are often awkward and constrained, with dimensions that are high, wide, and shallow. At Bergdorf's, for example, where the prime cases measure 12 feet high by only 4 feet deep, the store's signature move is to create seemingly deep and complex compositions within that compressed space. These solutions often depend on a painted background that gives an illusion of depth, with a few elements, such as a building or piece of furniture, shown in shallow relief. And although, as in a Bergdorf's Holiday 2000 window (see opening spread), where the draperies, angel's wings, chandeliers, human limbs, and other elements seem almost to be caught in mid-explosion, the mostly paper display is actually conceived as a series of distinctly lighted layers. It conjures a world in which the everyday rules of physics have somehow been suspended. A diagonal, lancelike element breaks through these planes as it juts through the mirror frame and establishes a forced perspective, while evoking a peculiarly upscale Annunciation.

Lighting is one of the principal tools designers have for creating a sense of space and depth, but because store windows are most often seen in changing conditions of daylight, their illumination is difficult to control. Even though designers can use a splash or two of colored light to bring a scene alive on a sunny day, the opportunities to vary lighting are far more limited in this case than they are in theater sets or museum dioramas.

As early as the 16th century, artisans and cloth merchants in some European cities decorated their shops by placing items in the windows. However, the storefront display window as we know it depended on

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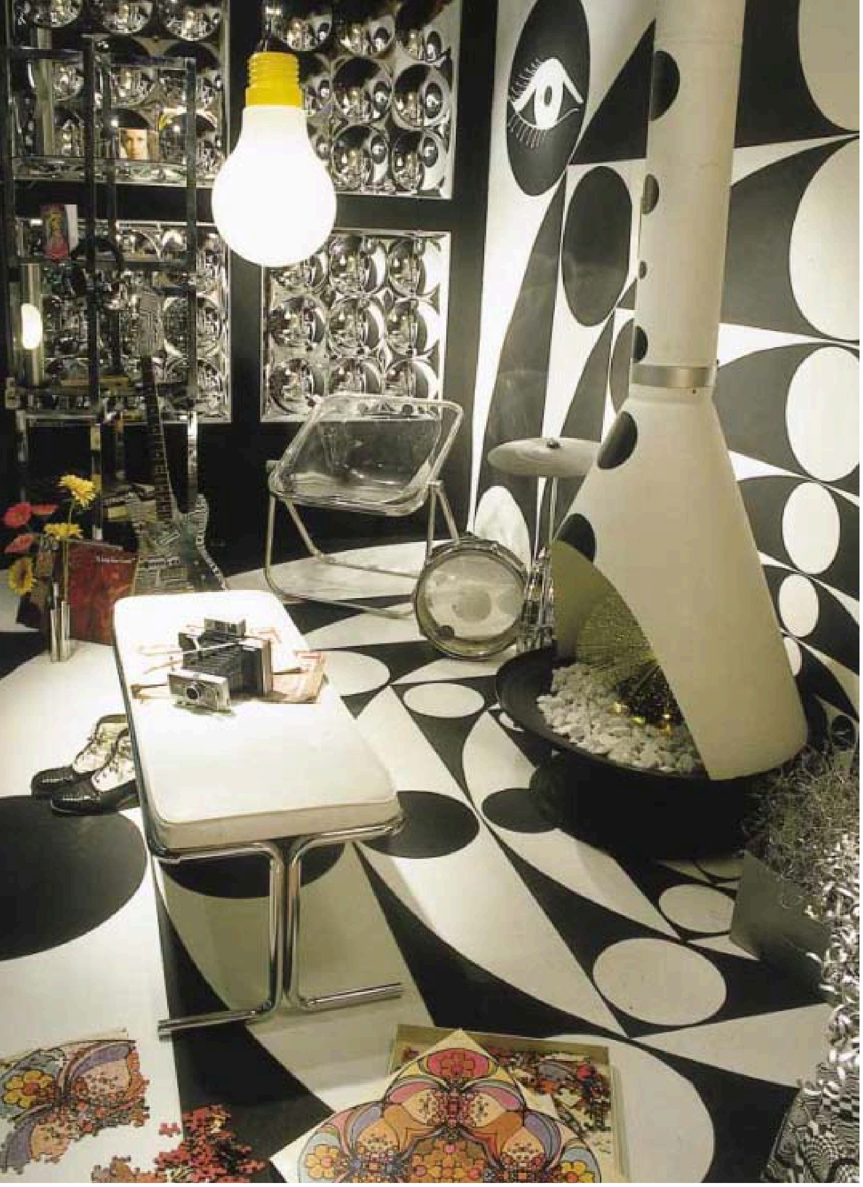

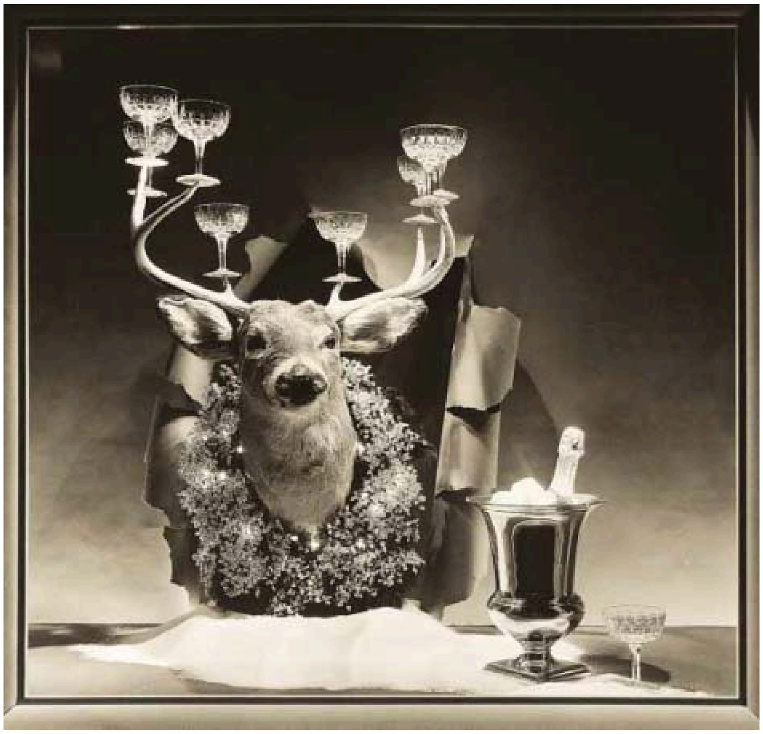

In the Holiday 2000 windows at Barneys New York, the creative director, Simon Doonan, evoked the prevailing styles of the prior 50 years. For the 1960s, when Op Art reigned, he exploited the optical effect of pattern (above left). In a Tiffany window for Christmas 1955 (below), Gene Moore posed fun uses for deer antlers.

several 19th-century developments, including the economical production of plate glass, the introduction of ready-to-wear clothing, and the invention of the department store. By the 1880s, especially in American cities, stores featured large vitrines filled with a variety of merchandise arranged in complex geometric patterns.

But the spark that led to the modern store window was the introduction of the mannequin in Paris in the 1890s. The early, heavy wax figures, with realistic glass eyes and real human hair, look creepy today, but it was immediately evident that they could bring a whole new kind of drama to the American Main Street.

In this country, people looked to department stores to tell them how to live. Immigrants peered through shop windows for lessons about how to be middle class. At many stores, the back walls of the display spaces were paneled in classically detailed oak, which was suitable for scenes in suburban mansions, Ivy League common rooms, and exclusive clubs. In Chicago in the early 1900s, crowds used to gather outside Marshall Field waiting for the week's new window to be unveiled. Windows helped establish commercialism as an important element of community life, especially at Christmas. Just about every department store in the country drew crowds of spectators by increasing the window budget and creating popular attractions—a ritual that continues in many cities today.

One who was fascinated by the possibilities of this development was L. Frank Baum, who in 1897, a couple of years before he began writing the book *The Wizard of Oz*, founded the magazine *The Show Window*, the first publication about retail display. Amid technical articles, he included more personal reveries, including one in which bronze statues in the park lust after the gorgeous mannequin on view in the shopfront.

This element of fantasy and eros has persisted for more than a century. For Marcel Duchamp in 1913, gazing through a store window at a desirable object was "coition through a sheet of glass." The French term for window shopping is "*lécher les vitrines*," lick the showcases.

In 1939, Salvador Dali, who had earlier brought Surrealism to Fifth Avenue in some windows for Bonwit Teller, created *Narcissus White*, which featured a fur-covered bathtub from which hands emerged, holding mirrors. While it was being installed, the bathtub, in an apparent accident, crashed through the glass, and Dali jumped through right behind it. This window, which was not repaired, was never photographed, although it may be the most famous shop installation in history.

Many artists have done store treatments. Some, like Andy Warhol, have proudly used their own names,

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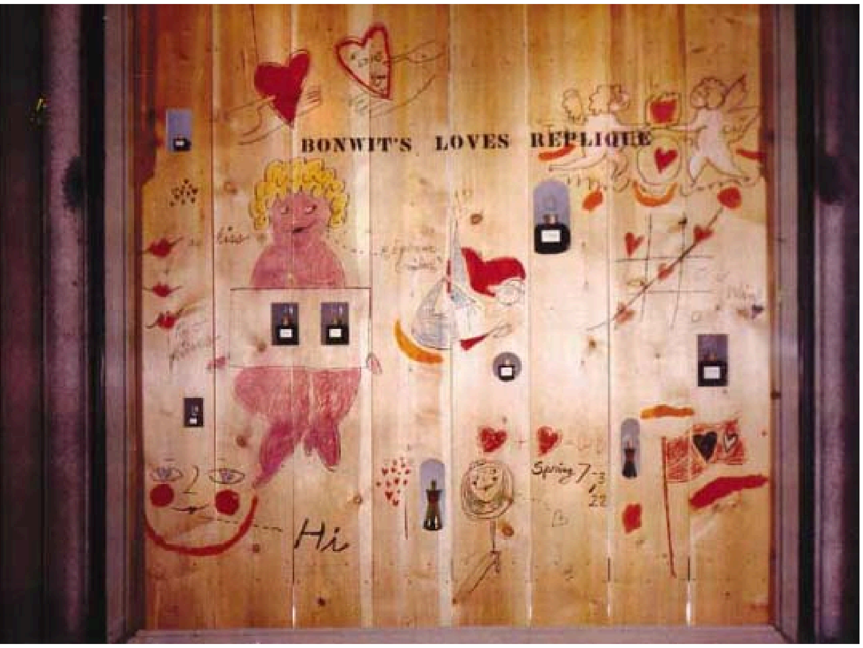

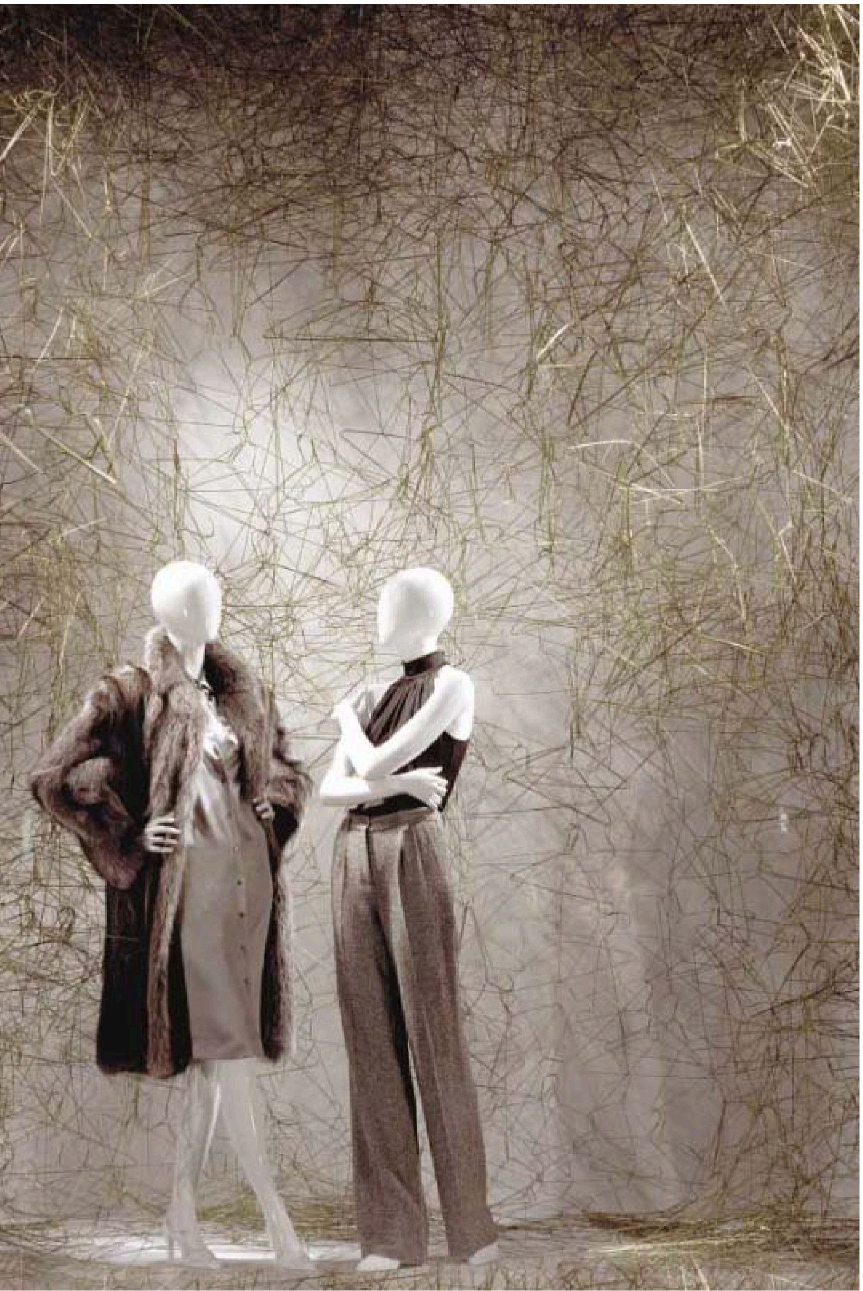

As compositional devices, linearity and flat planes can augment space in a shallow window. Andy Warhol exploited them around 1955 for Bonwit Teller in Manhattan (top left and right). David Hoey's wire-hanger window done for Bergdorf's in the summer of 2000 (left) created a three-dimensional world out of linear elements.

and others, like Jasper Johns and Robert Rauschenberg, working as a team for Bonwit Teller in the mid-1950s, have preferred to take a pseudonym (here, Matson-Jones). During the 1920s, store windows also helped launch the careers of such important industrial designers as Norman Bel Geddes, Donald Deskey, and Raymond Loewy, who two decades later would adapt the department store to the suburbs.

But while architects have created important store buildings—for example, Louis Sullivan's Carson Pirie Scott in Chicago, Daniel Burnham's Marshall Field in Chicago and John Wanamaker in Philadelphia, and Victor Horta's L'Innovation in Brussels—few have been interested in windows per se. (Although, according to his close associate Amédée Ozenfant, Le Corbusier thought "window-dressing is an important factor in … town planning." He was of the belief that window dressing was becoming increasingly rational, an observation for which there was scant evidence.)

An architect who did throw himself wholeheartedly into window design was Frederick Keisler. He argued that while schools and museums had been responsible for introducing Modernist ideas in Europe, in America this job was being undertaken by the department store. In 1925, he designed a glass-walled spiral department store, a sort of proto-Guggenheim that offered 20 floors of continuous selling space. And in 1928, commissioned by Saks Fifth Avenue, he removed the windows' oak side

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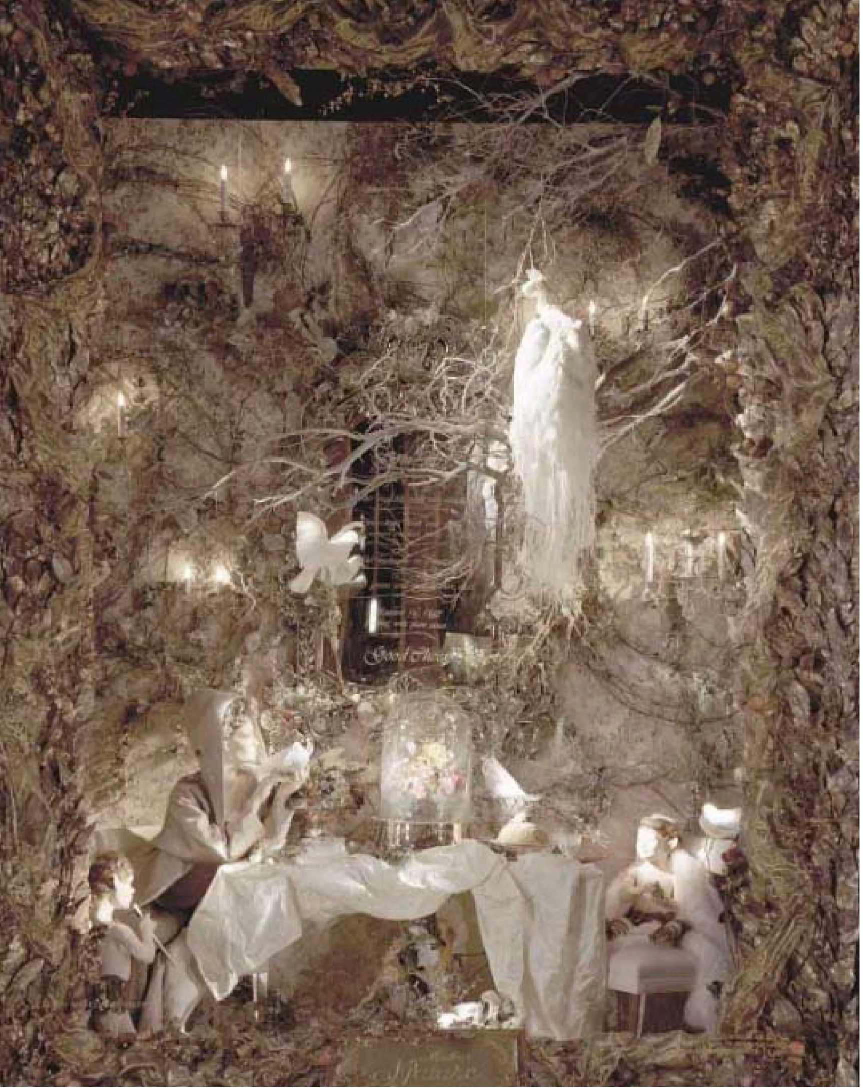
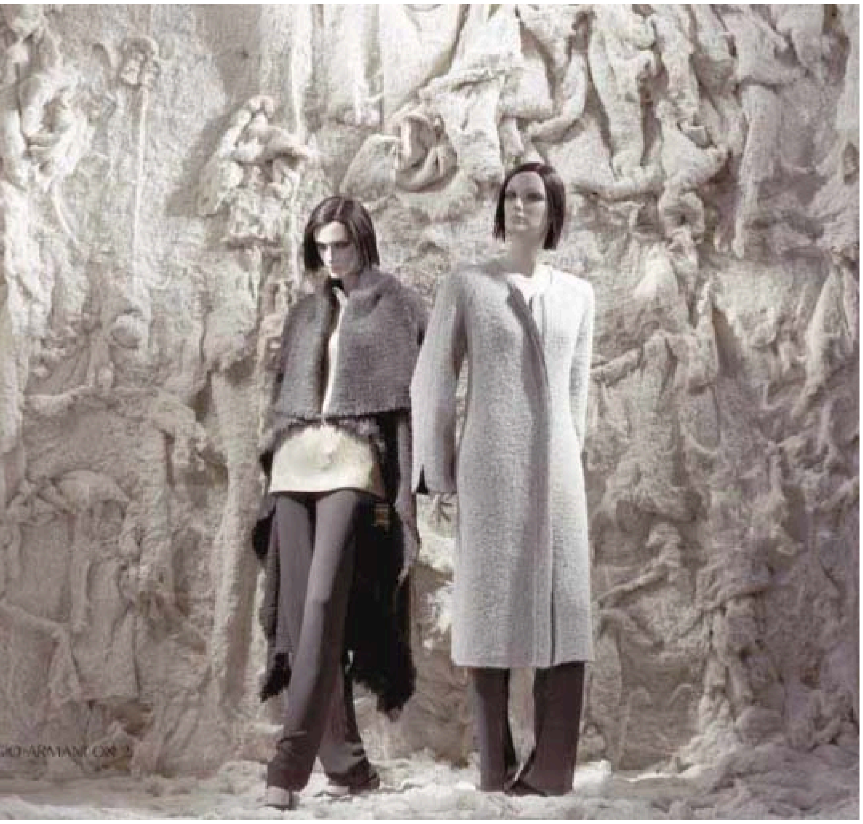
WINDOW COVERINGS





For Christmas 1997, Bergdorf's vice president for visual presentation and image, Linda Fargo, fabricated an accretion of intricately tangled leaves, fruit, and branches (left) to create an illusion of depth. In the store's fall 1999 window, David Hoey's wall of cotton fiber took the textural into a tectonic realm.

walls and created a selling space according to Modernist principles. He claimed to have been the first to have broken out of a classically representational sort of merchandising, in which shoes were placed low, hats high, and belts somewhere in the middle.

Like Geddes, who was working about the same time for Franklin Simon in New York, Keisler hoped to introduce a system of window display. Neither succeeded; system implies pattern, which in turn implies predictability. But the audience for show windows is like the figure in one of Gene Moore's installations who liked hats so much she sprouted an extra head. People want the new, the irrational, the amazing.

On a recent stroll in New York, one could see robots on surfboards; well-dressed mannequins menaced by giant, multicolored dung beetles; and figures seeming to emerge from layers of ancient wallpaper. But outside of a few major cities, such imaginative displays are rare. The consolidations and bankruptcies in the department store industry that began in the 1980s have made it unlikely that any department store chain will be as daring as it was in the past.

Overall, the greatest threats to this art form are the loss of pedestrian traffic in cities, the decline of the department store, and the rise of merchants who do not see such localized, handmade creations as part of their brand strategy. Even merchants doing business out of downtown stores that once offered imaginative showcases do not use their displays aggressively, because their style is set in malls where most stores don't even have windows. And while so-called lifestyle centers with outdoor public areas are the latest trend in retail development, the stores in such centers rarely do window display, relying instead on posters and graphics that are tied to the chains' advertising campaigns.

"Many retailers are simply willing to stick anything in the window; they don't recognize the power windows have," says Bergdorf's Linda Fargo. One result is that few people get to see good examples, and the number who want to do them is dwindling. Most retailers concentrate their efforts inside the stores. A few retailers, most notoriously Prada, have sought to use celebrated international architects to express their brand identity. Prada's new store on Rodeo Drive in Beverly Hills, designed by Rem Koolhaas, eliminates the storefront shop window and substitutes a wall of air.

"Window display may be, as people say, a dying field," says Janet Wordley, head of visual merchandising for Harvey Nichols, an English specialty store chain whose shop on London's Knightsbridge is known for its windows. "But it seems as if it has been dying for years and years. For those of us who get to do it, this sense gives us a little more license to be experimental." ■

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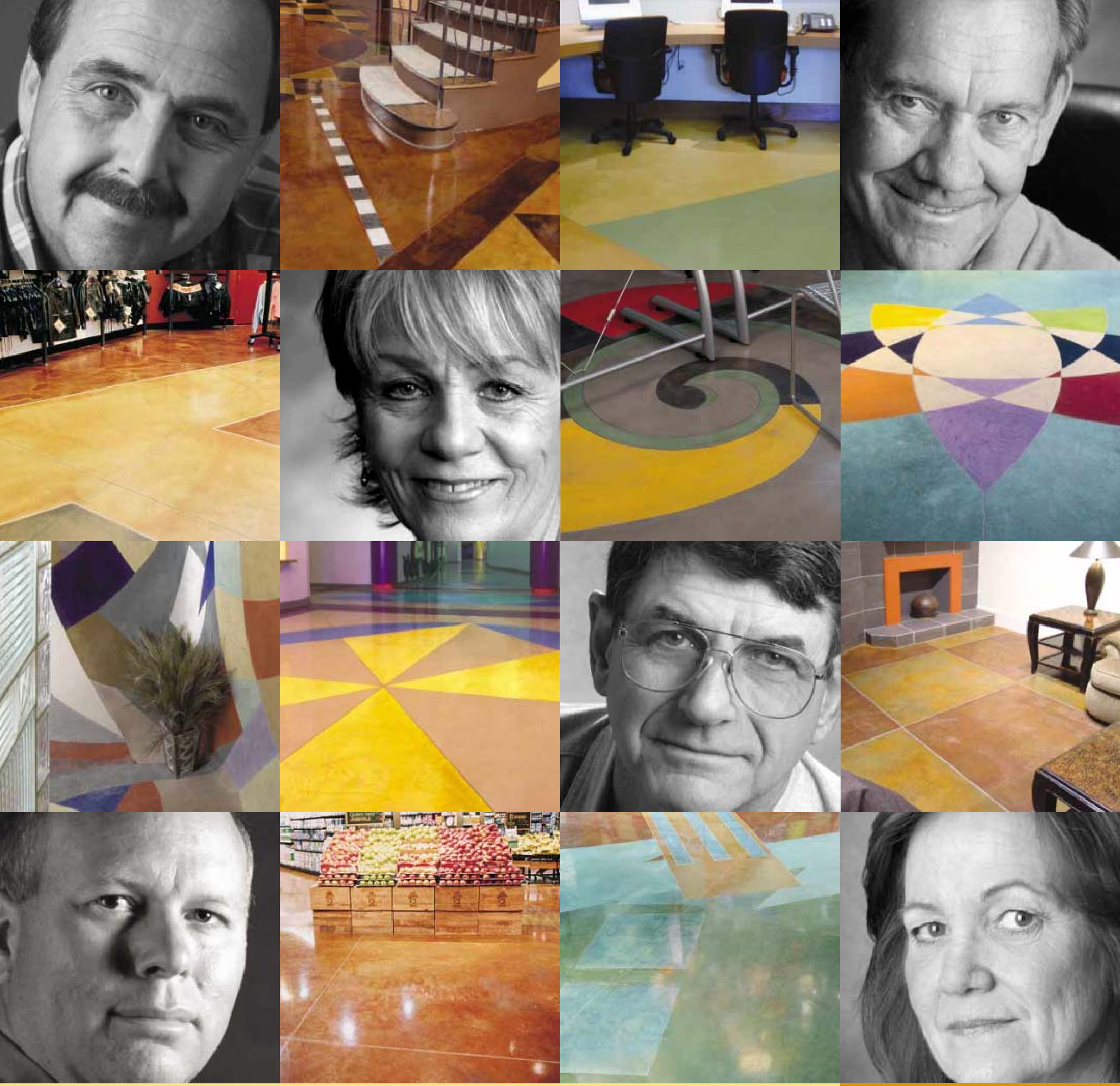

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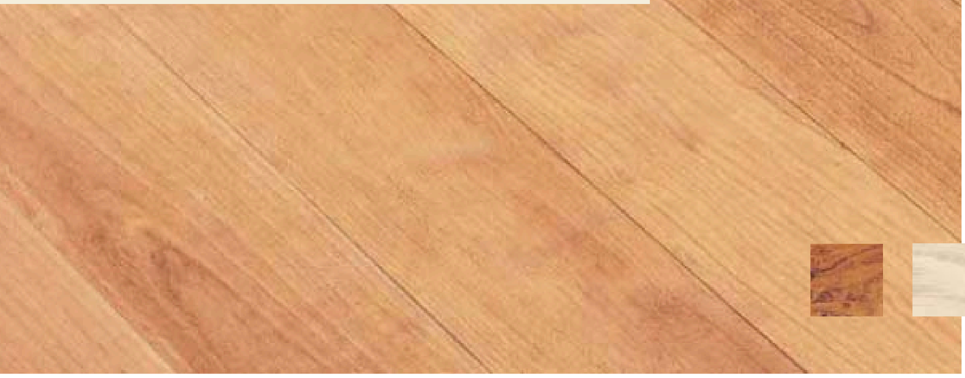

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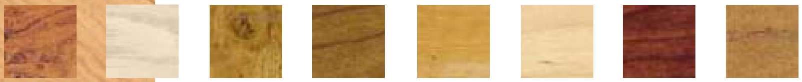

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Record Interiors 2004

If life gets its spice from variety, then this year's Record Interiors serves up a real palate sparker. The 2004 interiors include a savory array of functions, forms, and venues, ranging from a holistic pharmacy in Amsterdam to a cultural center in Warsaw; a sound studio in Los Angeles; a university mathematics department in Hamilton, Ontario; a café and a small museum in New York City; and a hotel in Berlin.

The architectural sensibilities and design approaches are as varied, or highly seasoned, as the programs and sites themselves. At the Ini Ani Coffee Shop in New York, for example, Lewis.Tsurumaki.Lewis gives unexpected elegance to commonplace, typically throw-away materials—corrugated cardboard and coffee-cup lids—while at the Skyscraper Museum, just a short distance away, SOM explores mirrors and architectural sleight-of-hand to achieve the illusion of infinite verticality within a low, horizontal space. And whereas Studio 0.10 deftly plays sleek, curvy Minimalist wall planes against the rough-hewn floors and ceilings of AZLA sound studios in Los Angeles, Kulczynski Architects consciously preserves industrial grit almost universally throughout Warsaw's Fabryka Trzciny cultural center.

1. Concrete
2. Lewis.Tsurumaki.Lewis
3. SOM
4. Graft
5. Studio 0.10
6. Kulczynski Architects
7. KPMB

Many of the featured projects establish a strong counterpoint between inside and out, but do so in markedly different ways. At the James Stewart Centre for Mathematics at Hamilton University in Ontario, for instance, KPMB sets up a constant interplay between the structure's neo-Gothic exterior and its now stripped-down, highly planar Modernist interior, allowing pointed arches and ornate ironwork to cast poetic shadows across crisp, new surfaces. By contrast, the interior of Q!, the Berlin hotel, seems more like an exotic animal, caged within the building's outer walls. Here, Graft architects fills an existing, rigidly boxy gray shell with a sculpturally fluid interior of folded planes. Vivid glimpses of the lobby, suffused in deep red, appear from the outside. Inside, conventional restraints—so dominant on the facade—cut loose as walls flow seamlessly into ceilings, furniture, or floors and, in guest rooms, beds, and bathtubs, meld together.

Finally, at De Lairesse Apotheek in Amsterdam, the design by Concrete balances one expression of calm against another. The architects expanded the entryway of a plain, subdued 1920s brick facade to reveal the pristine and luminous translucencies of its new interior. With clean-lined glass cabinets arranged in an embracing arc, images of ginkgo leaves on the floor, and gently glowing panels printed with the periodic table, Concrete fashioned the space to convey serenity and wellness. In quiet contrast to its brick shell, the interior produces no extreme jolt.

Though the seven featured projects appear undeniably diverse, each one, in its own way, immerses its users in a distinctive milieu. Whether it's a café lined in rippled, mocha-colored cardboard, a modest museum of deceptively dizzying heights, a cultural center with a well-seasoned industrial patina, or any of the rest, we invite you to turn the page—and partake. *Sarah Amelar*

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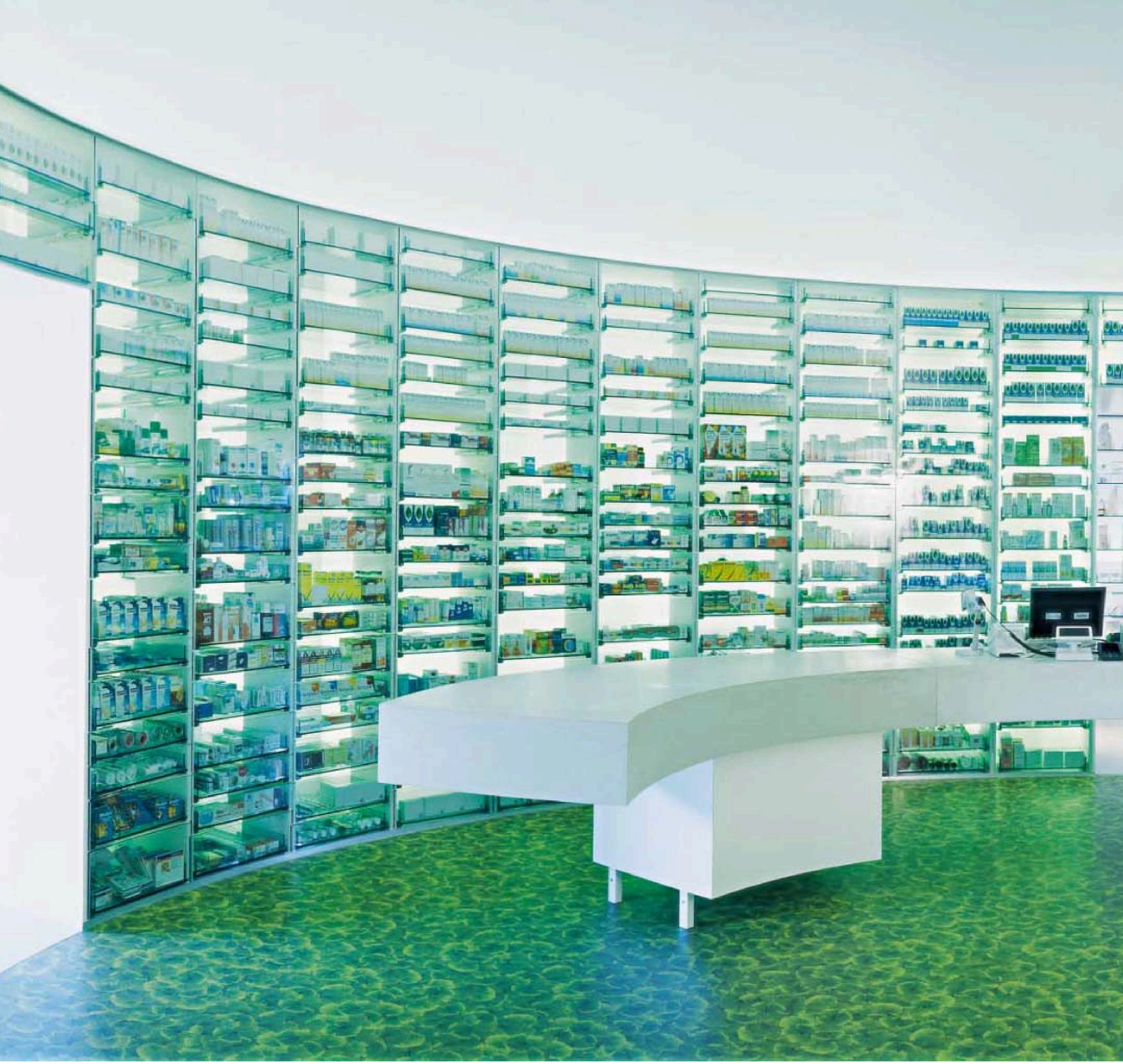
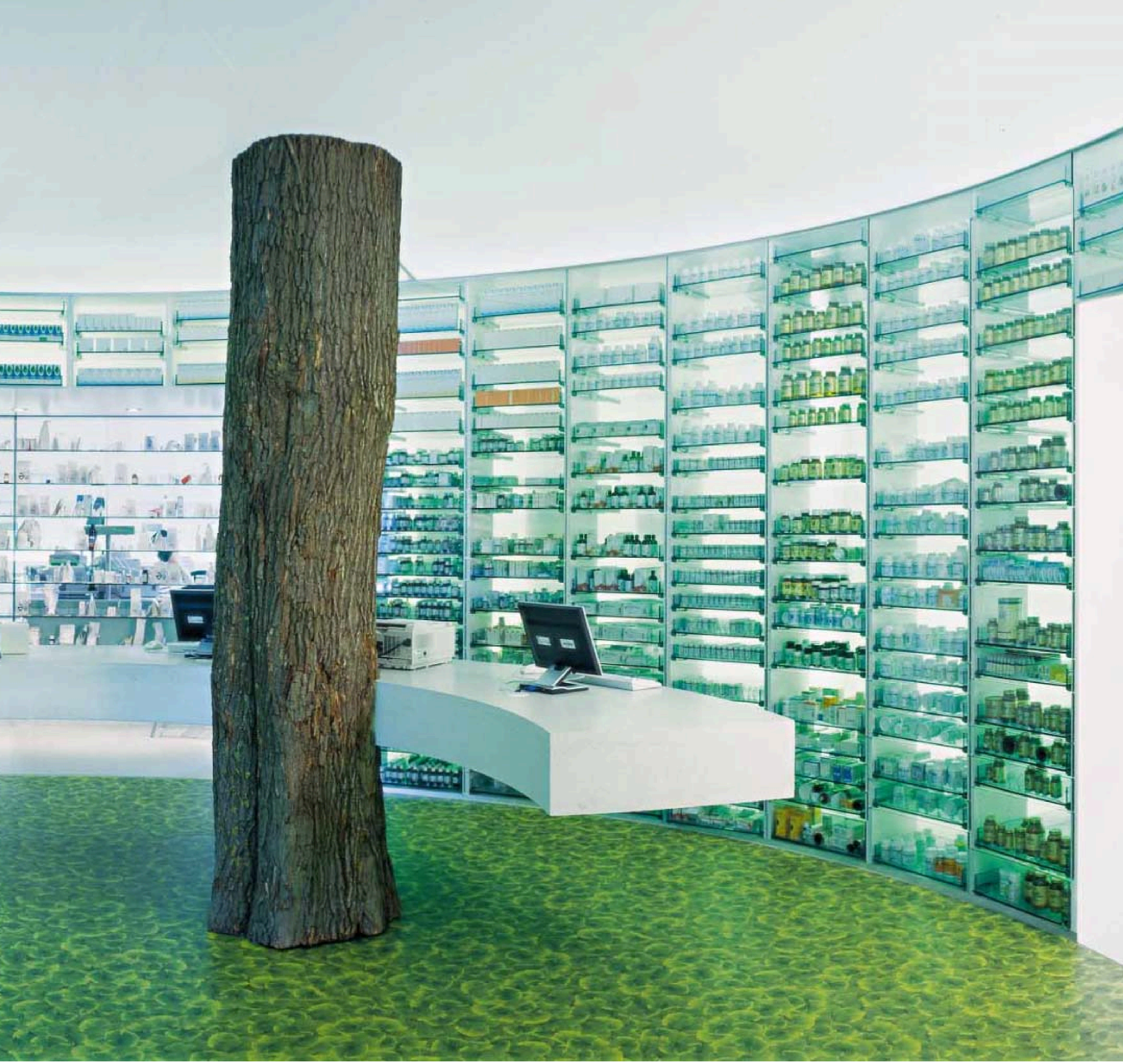
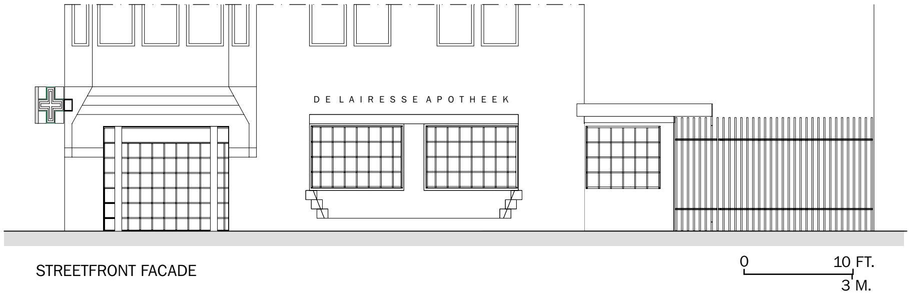
PHOTOGRAPHY: COURTESY CONCRETE (1); © MICHAEL MORAN (2); ROBERT POLIDORI (3); HIELPER BRUNIER (4); FOTOWORKS/BENNY CHAN (5); JAN SMAGA (6); TOM ARBAN (7)



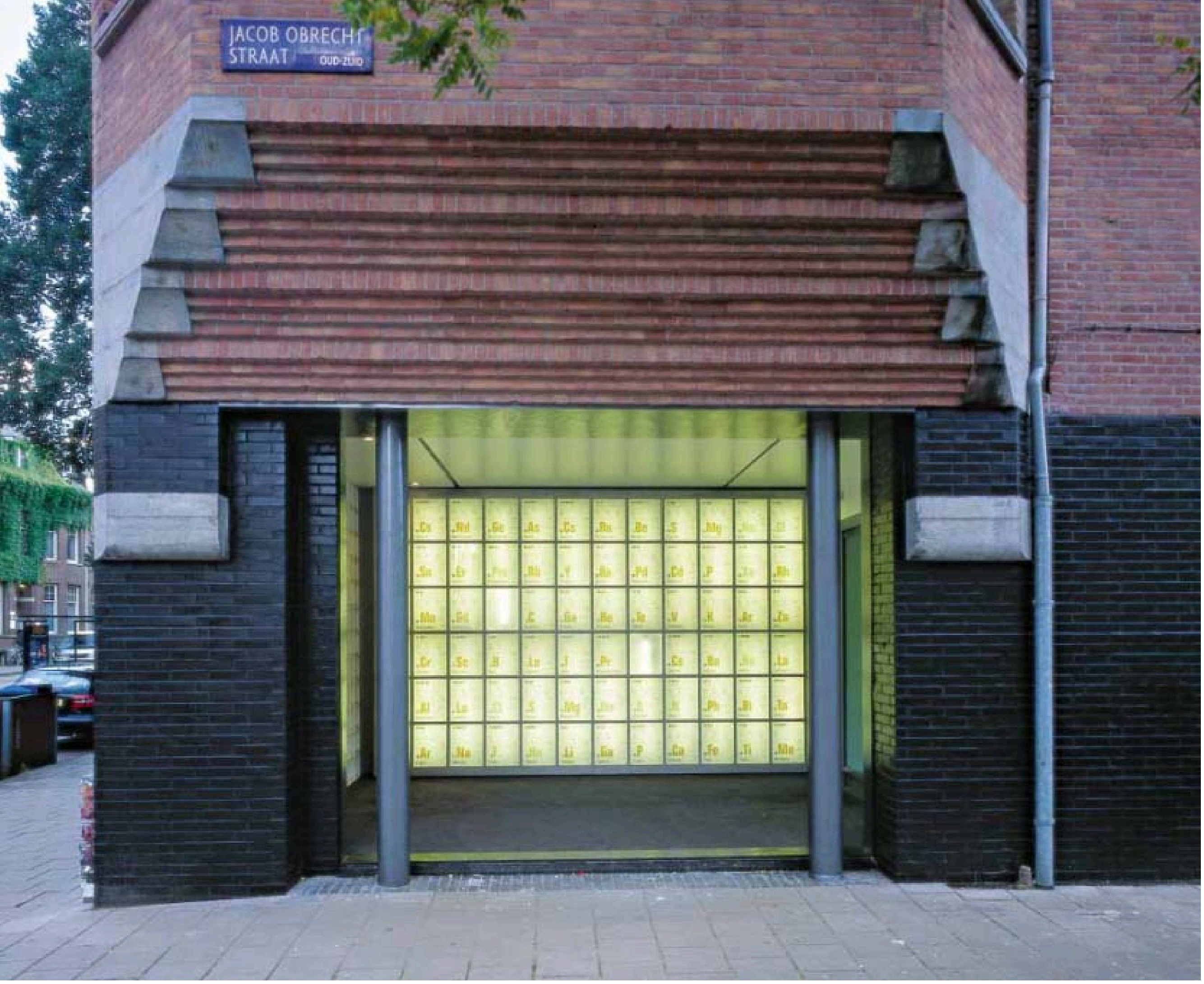
Through transparent, luminous materials and allusions to leafy forests, **Concrete** evokes serenity at **DE LAIRESSE APOTHEEK** in Amsterdam





STREETFRONT FACADE

The shop forms a circle edged by curved, transparent cabinets displaying medicinal remedies (above). From the exterior (next page), the glow of a backlit periodic table appears. The architect got permission to enlarge the original entryway (far left in elevation at left).



By Tracy Metz

Everything about De Lairesse Apotheek makes you want to heave a sigh of relief. Relax, the interior seems to say, all will be well. The generous entry, the serene hues of green, the tree trunk that seems to hold up the counter, and the glimpses into an herb garden alongside the building suggest leafy shadows, tranquility, and transparency.

For this apothecary specializing in natural and homeopathic medicine, pharmacist Marjan Terpstra took over the 1,830-square-foot ground floor of a stolid 1920s brick building on Amsterdam's De Lairesse Street, a tree-lined, two-lane artery. In transforming the interior from a bank office, she shunned a clinical or chemical sensibility, wanting to convey instead a sense of harmony between the natural and the synthetic.

Mutual acquaintances brought Terpstra in contact with Rob Wagemans of the Amsterdam design firm Concrete, known for its trendy bars and restaurants, as well as commercial spaces and offices, mostly in the Netherlands. Concrete also designed the interior of NL Restaurant in New York, and will soon open a San Francisco venue called the Supper Club, where diners eat lolling on long, white, mattresslike cushions. (The firm has already completed Supper Clubs in Amsterdam, Rome, and on a cruise ship moored in Amsterdam.)

Unlike the standard pharmacy, De Lairesse features a round shop with furnishings shaped from segments of a circle. "The round plan has no relationship to the building plan itself," Wagemans states unapologetically. "Our idea was to create a space that would seem to embrace you and give a feeling of escape from the rat race outside, at least temporarily."

Inside the main space, an arced, black-leather waiting bench faces a semicircular, concrete-epoxy counter that seems to hang from a tree trunk in the middle of the room. Hollowed out, the trunk actually sheathes a structural steel column. A green photographic print of gingko leaves beneath a protective layer of transparent epoxy covers the floor.

Medicinal products are arranged in 522 transparent drawers in floor-to-ceiling cases that curve to form segments of a circle. Fronted in green Plexiglas, the drawers glow with green backlighting—a signature technique in Concrete's bars and nightclubs. Another curved, glass cabinet screens the work area behind it and holds orders awaiting pick-up. In the old days, this zone would have contained a lab for mixing remedies, but now it's only a place for storing and dispensing such items. As a reminder of that earlier era, long glass shelves along the back wall display bottles and vials in myriad shapes and sizes.

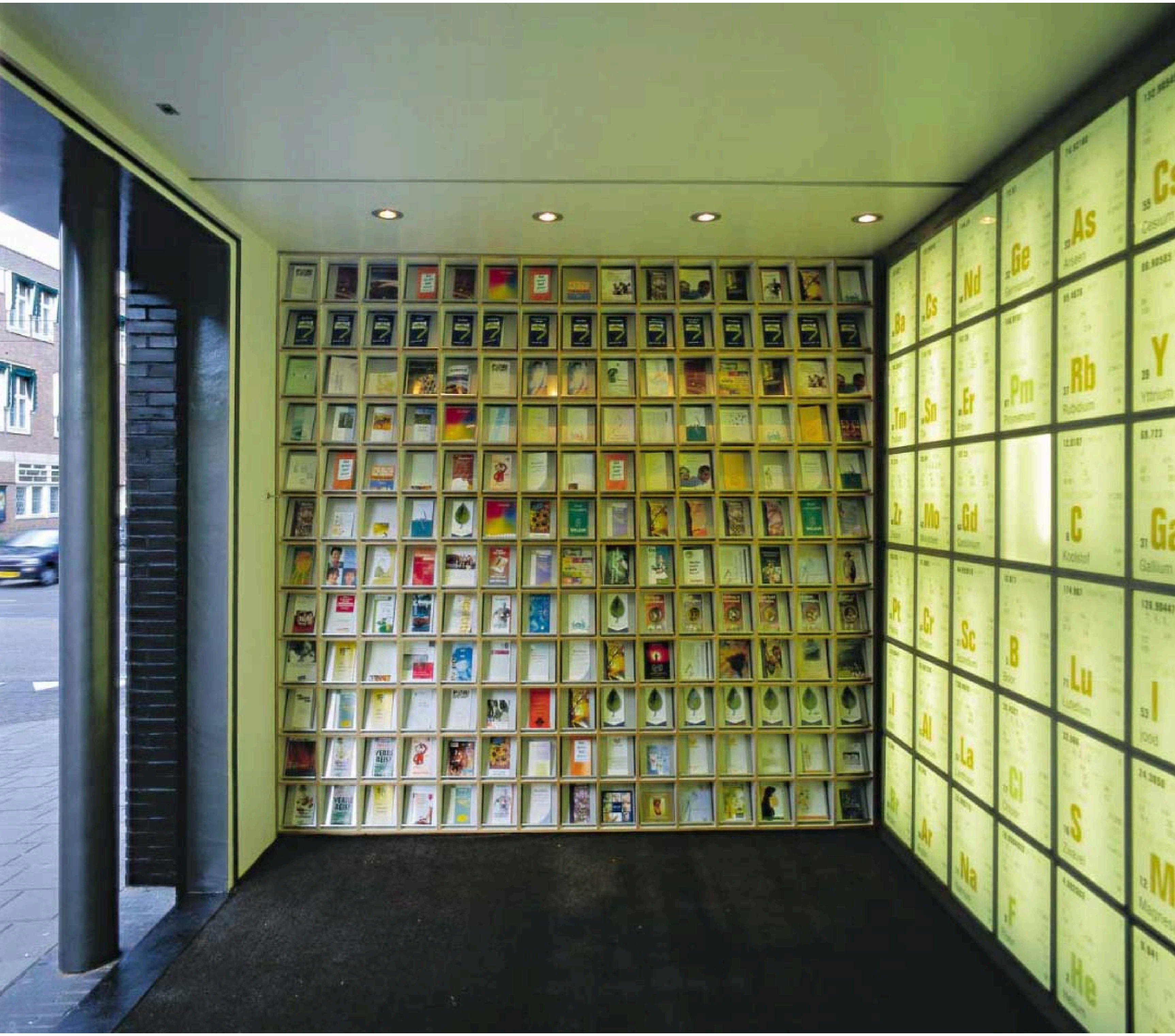
Next to the main space, a small side room provides a table with two chairs where clients can sit and read about natural and homeopathic

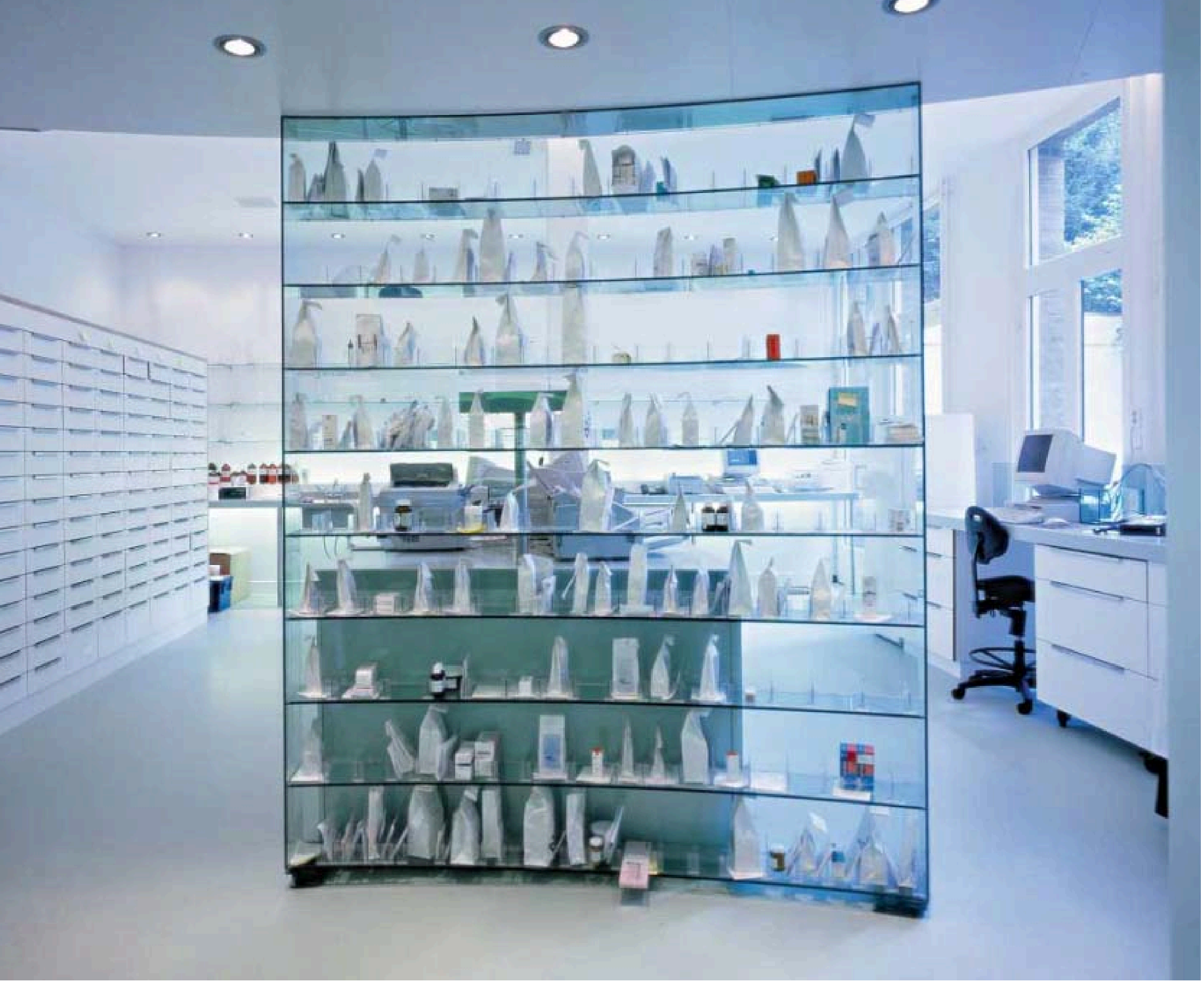
Tracy Metz is RECORD*'s Amsterdam-based correspondent.*

Project: *De Lairesse Apotheek, Amsterdam*
Architect: *Concrete Architectural Associates—Rob Wagemans, architect; Gilian Schrofer, designer; Joris Angevaare, project architect; Erik van Dillen, interior architect*
Consultants: *De Best Elektrotechniek (lighting); Labotorivm (graphics)*
General contractor: *D.P.D. Doornbos*

PHOTOGRAPHY: COURTESY CONCRETE ARCHITECTURAL ASSOCIATES

One wall of the entry vestibule provides brochures on natural and homeopathic treatments (center in photo below). The luminous periodic table (at right below, and opposite) forms a wall that can slide forward to seal off the entrance at night.





treatments or hold private consultations with the pharmacist. The apothecary also organizes lectures and runs a mail-order service. And brochures on almost every imaginable ailment are available on shelves lining a side wall in the entry area. This spacious, loggialike vestibule, for which the architects cut out a 13-by-16-foot section of the building's brick facade, also presents the periodic table in backlit, translucent panels across its rear wall. The paneled layer doubles as a mobile facade on rails when the staff slides it forward at day's end to seal off the entrance.

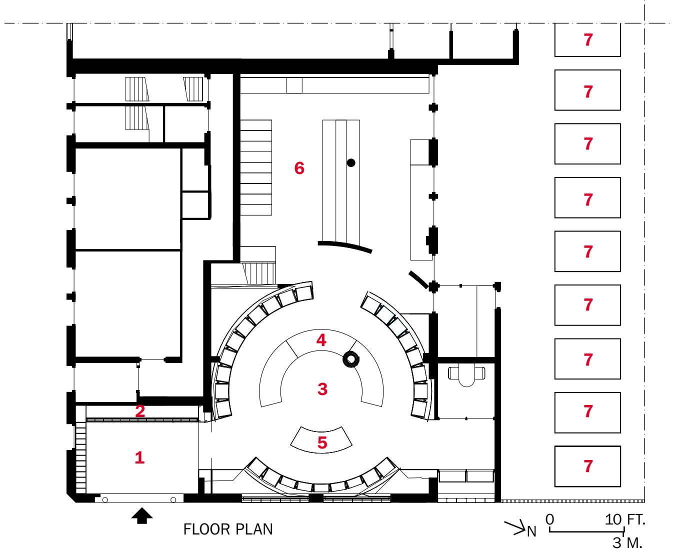
Getting permission to enlarge an ordinary front door into a more generous opening involved considerable discussion with the Municipal Aesthetics Board. After that was resolved, the neighbor across the street complained about nighttime glare from the backlit panels.

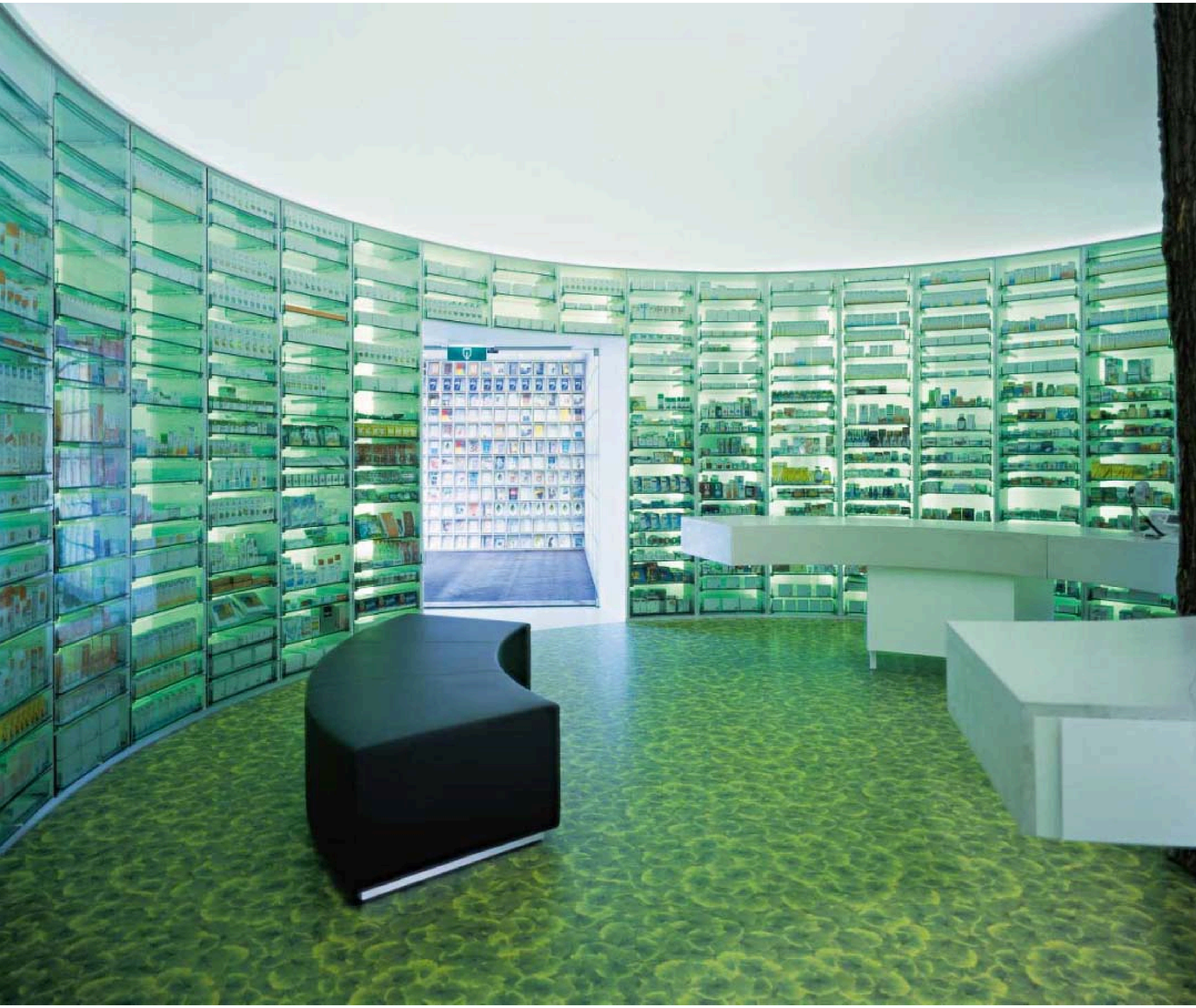
But most of the response has been positive. The pharmacy won a Dutch Design Award last year, and it pleased Wagemans to see his unconventional pharmacy honored in the seemingly conventional category of "retail environments." Here, even staff attire deviates from drugstore norms. At Terpstra's instigation, all the employees were chicly outfitted at Armani in all white and/or black—calm-looking garments compatible with the atmosphere of wellness and relaxation. The owner also had special leather aprons designed for them. "Our job as architects is to materialize our clients' dreams," says Wagemans. "Marjan Terpstra's dream is to make people better." ■

Sources
Counter: *Corian*
Lighting: *Erco; Modulor*

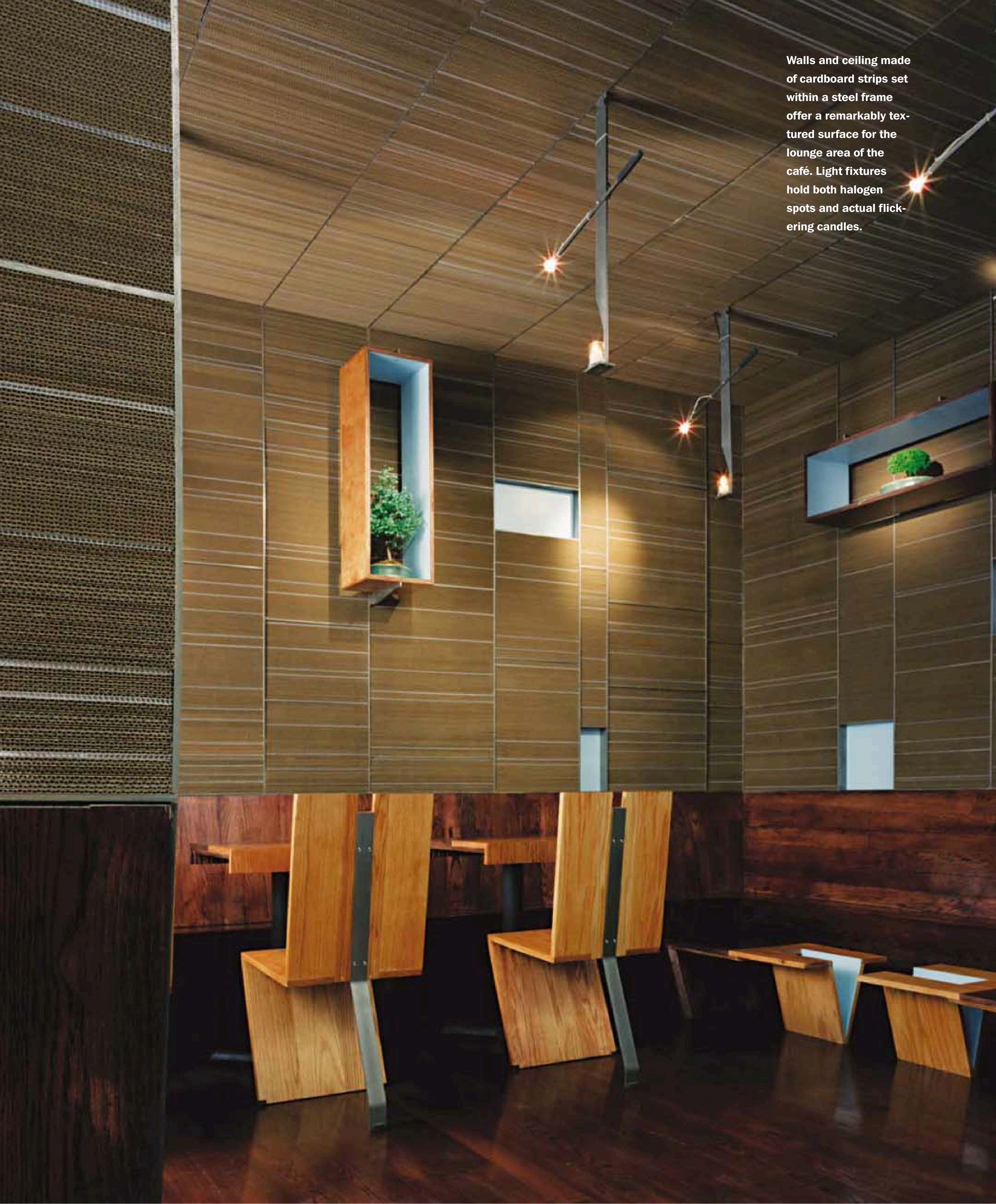
For more information on this project, go to Projects at **www.architecturalrecord.com**.

1. *Vestibule*
2. *Periodic table/ sliding facade*
3. *Shop area*
4. *Counter*
5. *Seat*
6. *Work area*
7. *Herb garden*





The floor bears a photo of gingko leaves beneath a protective layer of clear epoxy (this page). A glass cabinet (opposite) screens the work area from front-of-the-house activities and holds orders awaiting pick-up.



Walls and ceiling made of cardboard strips set within a steel frame offer a remarkably textured surface for the lounge area of the café. Light fixtures hold both halogen spots and actual flickering candles.

For the pint-size INI ANI COFFEE SHOP in Lower Manhattan, Lewis.Tsurumaki.Lewis reinvents the java-sipping experience

By Clifford A. Pearson

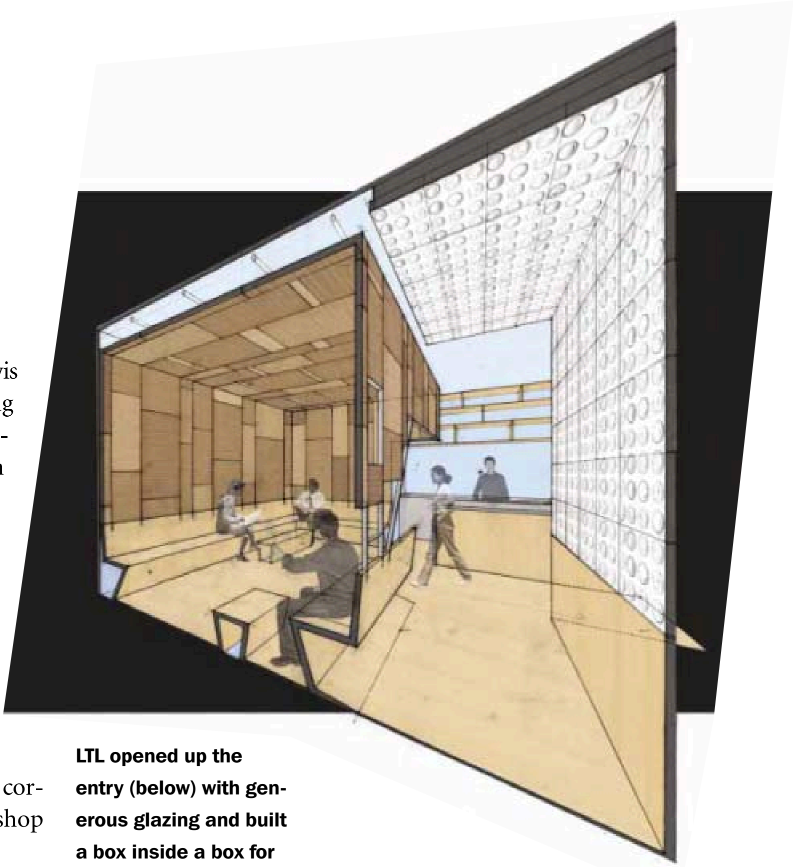
Fast, cheap, and in control. That's the way Lewis.Tsurumaki.Lewis (LTL) tackled the small but challenging job of designing and constructing a hip café in New York City's rapidly gentrifying Lower East Side. With less than three months from the start of design to the pouring of the first cappuccino and just $40,000 for construction, the 13-person firm managed to turn an old fortune-teller's parlor into an inviting place packed with spatial and material invention.

Headed by the twins David and Paul Lewis and Marc Tsurumaki, LTL designed and built almost everything in the 350-square-foot coffee shop—from the Cor-Ten-steel frame around the large (6-by-8-foot) storefront window to the vertical handle on the entry door and the light fixtures that combine a halogen spot with a flickering candle. Luckily, LTL's studio is right around the corner from the project, allowing the firm to fabricate pieces in their shop and walk them over themselves.

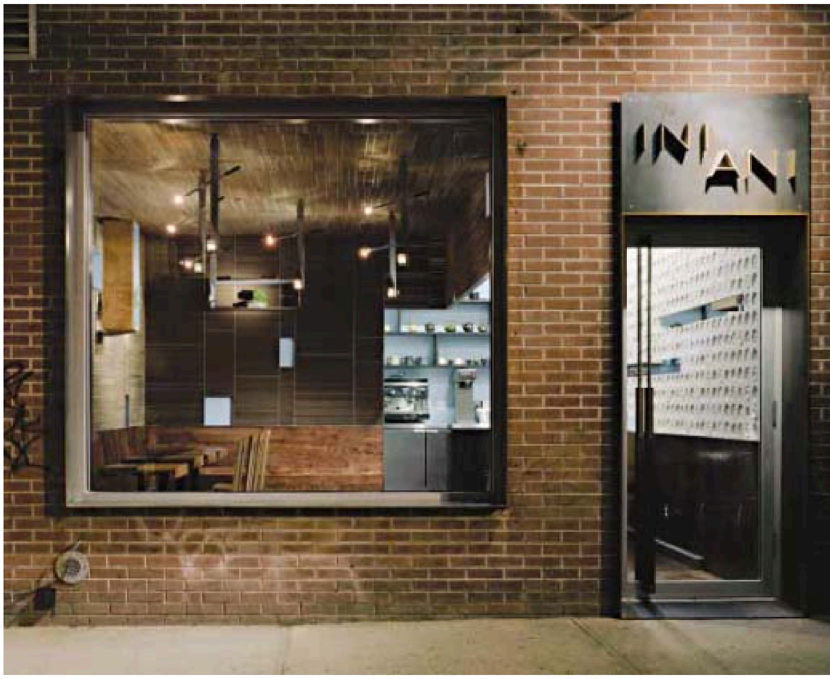
Collapsing design and construction into a seamless process, the firm was able to move quickly while using the project's constraints to inspire its form and surfaces. "The everyday aspects of the program helped generate the design," says David Lewis. So when the clients, Kevin Mancini and Payam Yazdani, asked for a subdued lounge in addition to space for take-out orders, LTL created a box within a box, using stacks of 2-inch-wide strips of corrugated cardboard to define the sit-down area. The architects set these strips in a steel cage, hot-gluing them together for a dropped ceiling but relying on only gravity and a tight fit to keep them in place on the walls. The cardboard absorbs noise from inside the café but allows light from spot fixtures and sound from speakers above the ceiling to trickle down to customers.

Along the path to the service counter, LTL created a wall with 479 plaster impressions of coffee-cup lids in various sizes and designs. The cool white surface, punctured by neat rows of circles, provides a welcome contrast to the rougher texture of the corrugated walls, and comments amusingly on our unthinking reliance on take-out throw-

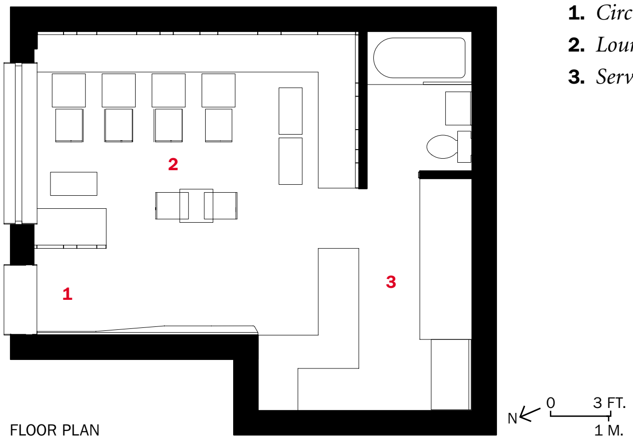
Project: *IniAni Coffee Shop, New York City*
Architect: *Lewis.Tsurumaki.Lewis—David Lewis, Marc Tsurumaki, Paul Lewis, James Bennett, Lucas Cascardo, Alex Terzich, project team*
Base contractor: *J.Z. Interior Renovations*
Design-build team: *Lewis.Tsurumaki.Lewis*



LTL opened up the entry (below) with generous glazing and built a box inside a box for the café (above).

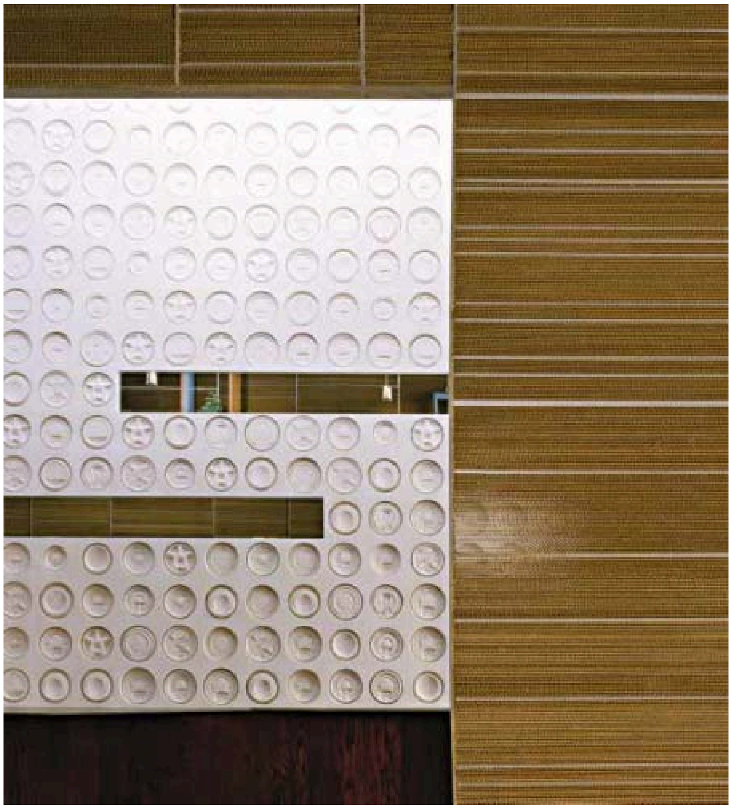


PHOTOGRAPHY: © MICHAEL MORAN, EXCEPT AS NOTED



FLOOR PLAN

1. *Circulation*
2. *Lounge*
3. *Service counter*



A contractor took care of demolition and electrical work, but LTL did all of the construction, including building the cardboard walls (upper left two) and casting the coffee-cup lids for another wall (left, right, and bottom left).

aways. "We like to take ordinary things and make something inventive out of them," explains Tsurumaki. The firm used laminated felt strips on a banquette at one restaurant and is now sticking bamboo skewers into the ceiling of another. Customers at IniAni often stop at the plaster wall and marvel at the array (more than 50) of typically unnoticed lid variations.

The architects designed and built the tables, chairs, and banquettes, echoing the floor's oak planks and the wall system's rolled steel. The result is a convergence between surface and form that ties the place together. Employing a limited palette and witty assemblage of inexpensive materials, LTL enriches the ordinary. As Paul Lewis explains, "Through repetition of the commonplace, you can change the way it's perceived." ■

Sources

Steel: *Ryerson Tull*

Wood: *Rosenzweig Lumber*

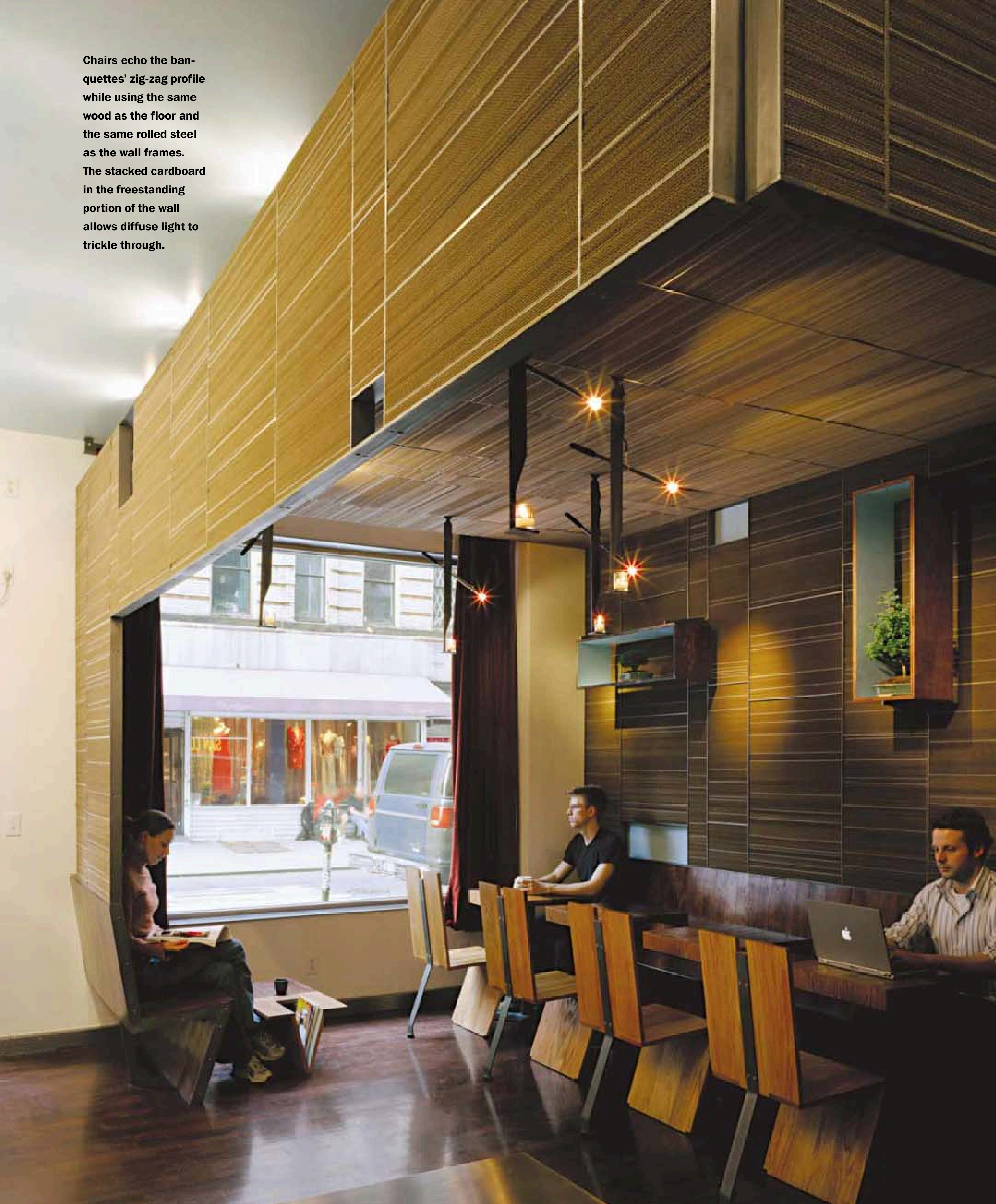
Cardboard strips: *Able National*

Stainless-steel counter and radiator covers: *Master Restaurant*

Tables, chairs, and banquettes: *Custom by Lewis.Tsurumaki.Lewis*

For more information on this project, go to Projects at **www.architecturalrecord.com**.

PHOTOGRAPHY: COURTESY LEWIS.TSURUMAKI.LEWIS (LEFT FOUR)



Chairs echo the banquettes' zig-zag profile while using the same wood as the floor and the same rolled steel as the wall frames. The stacked cardboard in the freestanding portion of the wall allows diffuse light to trickle through.

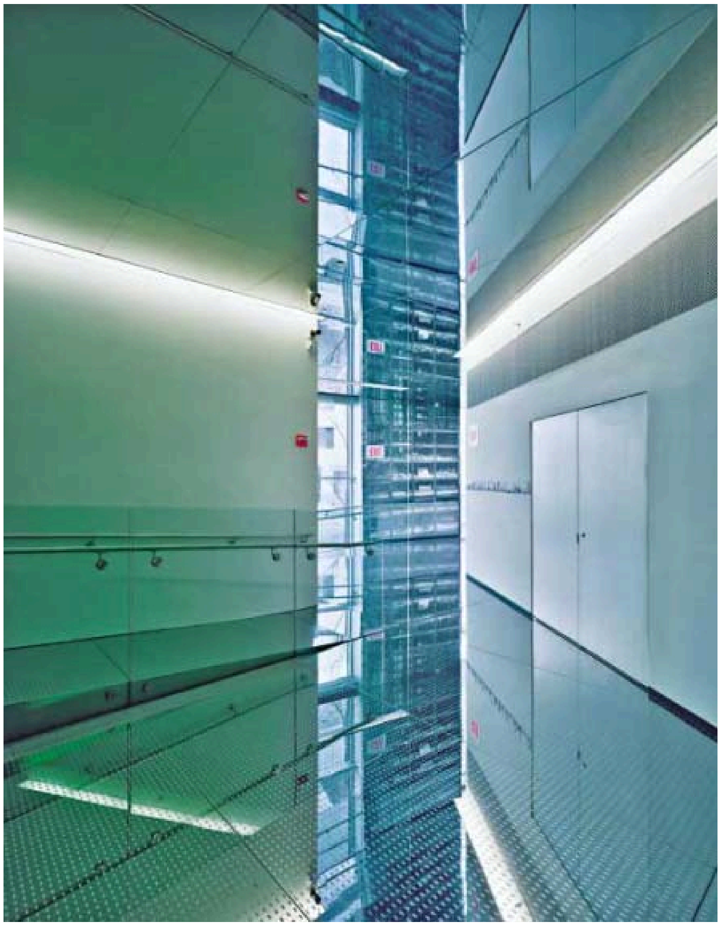
Transforming a horizontal space, SOM conjures up a gleaming interior world of vertical reflections at its SKYSCRAPER MUSEUM in New York City

By Suzanne Stephens

It seems slightly ironic to wedge a museum devoted to the taller-than-tall achievements of the skyscraper into a horizontal, ground-floor space. Yet Carol Willis, the founder, director, and curator of the Skyscraper Museum in Lower Manhattan, is elated with her 5,000 square feet at the back of the new Ritz Carlton Hotel in Battery Park City. For one thing, it was free: Millennium Partners, the developers working with the Battery Park City Authority, donated the space in a 67-year lease, where the museum pays only condominium charges.

Willis is also elated that Roger Duffy of Skidmore, Owings & Merrill (SOM) figured out a smoke-and-mirrors strategy to make the horizontal space seem vertical—without the smoke, of course, and with stainless-steel, mirror-finished panels on the floors and ceilings. And SOM's architectural expertise came gratis. On top of that, Tishman Construction volunteered construction management services and made sure the stainless steel and other materials could be had at a reasonable price. Jaros Baum & Bolles and Pentagram also donated their respective m/e/p and graphic design services. (The cost of the interior still ran to about $2.5 million.)

Often with freebies, the architectural result turns out nice, clean, and serviceable, offering a new coat of paint for which everyone feels immensely grateful. So it comes as a bit of a jolt to find a spectacular interior here. By surfacing floors and ceilings with gleaming, reflective, stainless-steel panels, Duffy tricks your eye—and your feet: You almost think you've entered a vertical interior world populated by tall display vitrines soaring to infinity. To give an ambient glow to these sleek, Minimal surfaces, Duffy and his team installed fluorescent panels at the tops of the vitrines. Appearing like so many windows illuminating the towers by night, the reflections of the lighted panels function as glimmering beacons to a world of skyscrapers above and below. No nasty interruptions in ceiling and floor planes mar the illusion; the raised-plenum floor where air is distributed conceals the electrical wiring and pipes.

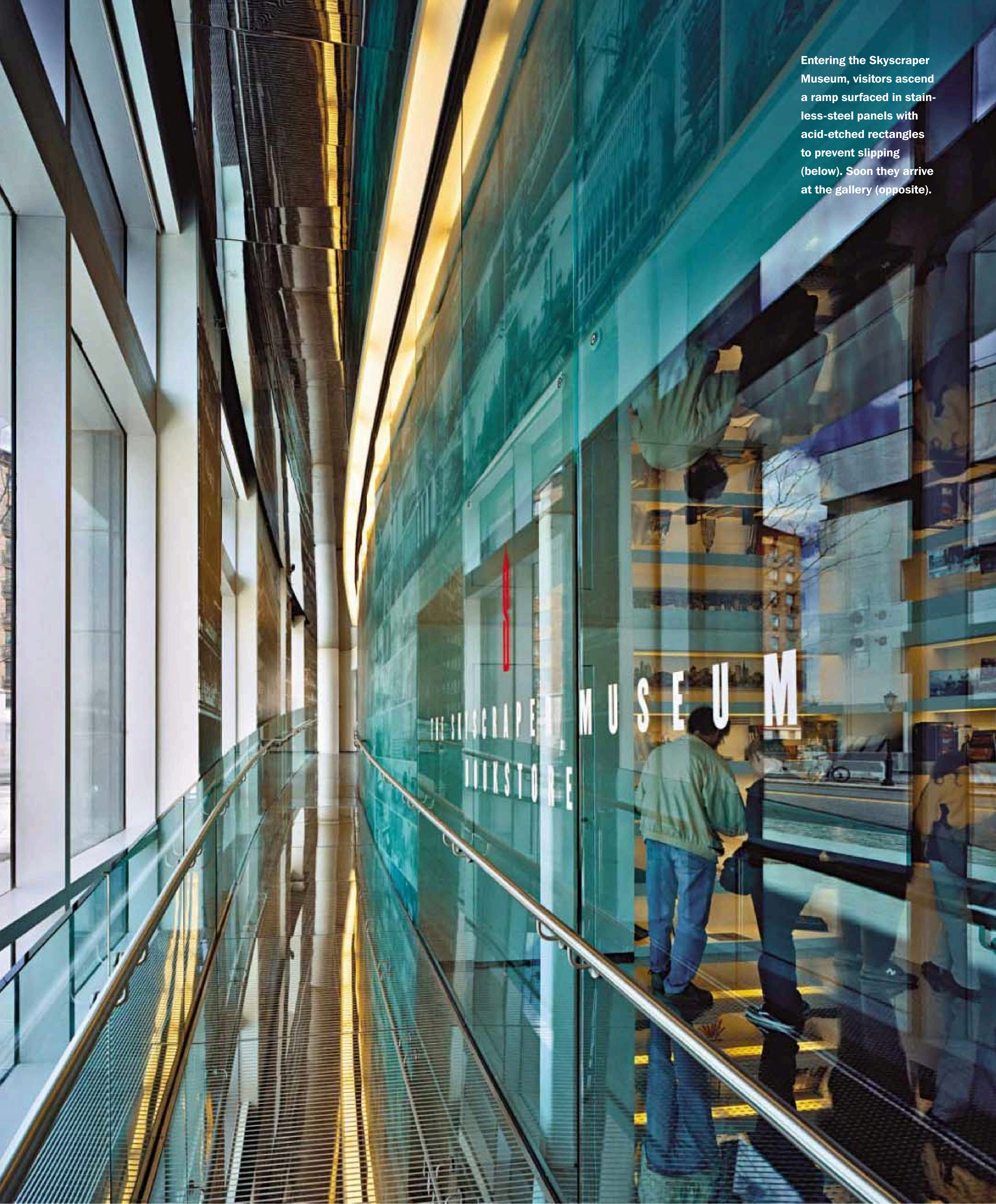


PHOTOGRAPHY: © ROBERT POLIDORI

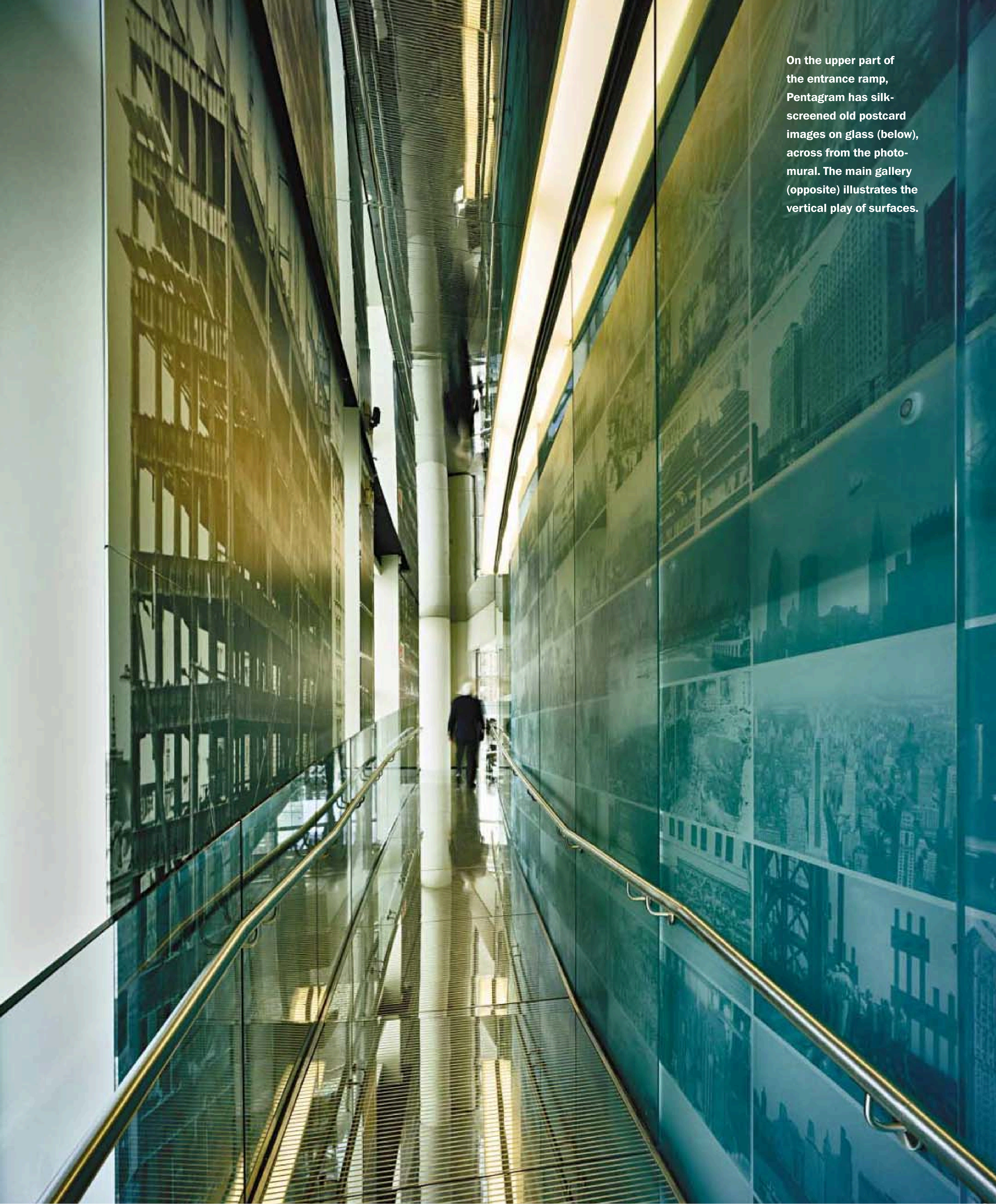
Project: *The Skyscraper Museum, New York City*
Architects: *Skidmore, Owings & Merrill—Roger Duffy, AIA, design partner; Scott Duncan, Associate AIA, Ross Wimer, AIA, senior designers; Kevin Peters, AIA, senior technical coordinator; Carlos Infantes, technical team*
Engineers: *SOM Chicago (structural); Jaros, Baum, & Bolles (m/e/p)*
Consultants: *SOM Chicago (lighting); Shen, Milsom, Wilke (acoustical); Pentagram (graphic design)*
Project manager: *Sedlis Goldstein Group*
General contractor: *Tishman Construction*

The displays within the fiberboard vitrines themselves resemble large Joseph Cornell boxes, providing succinct visual and textual histories of skyscraper icons, such as the Empire State Building and World Trade Center towers in New York and the Sears Tower in Chicago, along with recent structures, such as the Jin Mao Building in Shanghai. Exhibitions devoted to aspects of this 150-year-old American invention will change in the main part of the gallery, with permanent displays reserved for the perimeter.

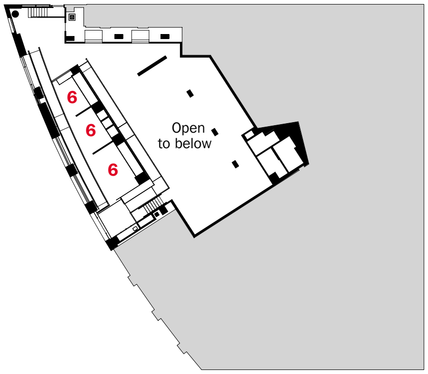
Visually amplifying the space with minimal means was not the architect's only trick. The found space, which rises to a 16½-foot height (floor-to-floor) underneath the hotel ballroom, needed to include the gallery, a bookstore, plus an additional 800 square feet of offices. Because of the high water table in Battery Park City, the basement space for the hotel popped up to 2 feet above grade for much of the area. Duffy placed the


THE SKYSCRAPER MUSEUM
BOOKSTORE

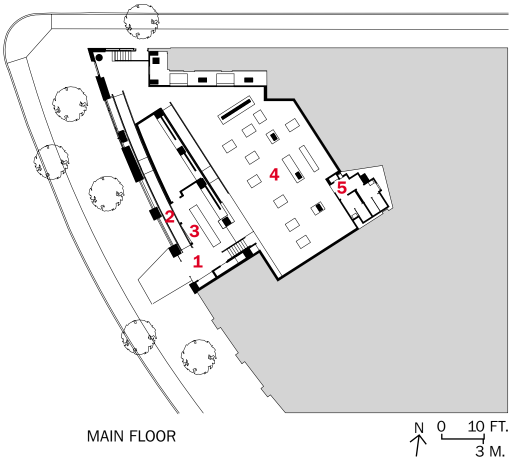
Entering the Skyscraper Museum, visitors ascend a ramp surfaced in stainless-steel panels with acid-etched rectangles to prevent slipping (below). Soon they arrive at the gallery (opposite).



On the upper part of the entrance ramp, Pentagram has silk-screened old postcard images on glass (below), across from the photo-mural. The main gallery (opposite) illustrates the vertical play of surfaces.



MEZZANINE LEVEL



MAIN FLOOR

1. *Entrance*
2. *Entrance ramp*
3. *Bookstore*
4. *Gallery*
5. *Bathrooms*
6. *Offices*

main entrance on the long west elevation, where a gradually ascending ramp, parallel to the perimeter wall, takes visitors past the bookstore up toward the north end and then into the gallery, 4½ feet above grade. Those going to the museum offices continue on the switchback ramp to the mezzanine another 4 feet above the gallery floor.

Although the concrete shear wall had to stay, SOM opened up the space by transferring the weight carried by the original grid of columns to three columns in the wall of the museum offices alongside the gallery. Most of the vitrines come with casters, although four vitrines, locked in place at the back of the gallery, conceal structural columns.

With this project's location six blocks south of Ground Zero and the increasing cluster of history museums in the area—the Museum of Jewish Heritage, the National Museum of the American Indian, and others—the Skyscraper Museum's sophisticated, kaleidoscopic setting should attract a fair amount of traffic. Shortly before Willis founded the museum in 1996, she wrote *Form Follows Finance* (Princeton Architectural Press, 1995), detailing how economics, not just function or aesthetics, determined the skyscraper's form. Ironically, as it turns out, she now presents these structures in a museum whose own form emerged from altruism. As they say, "Only in New York." ■

Sources

Glazing: *Viracon; Floral Glass*

Museum display vitrines: *GER*

Floor panels: *American Industries*

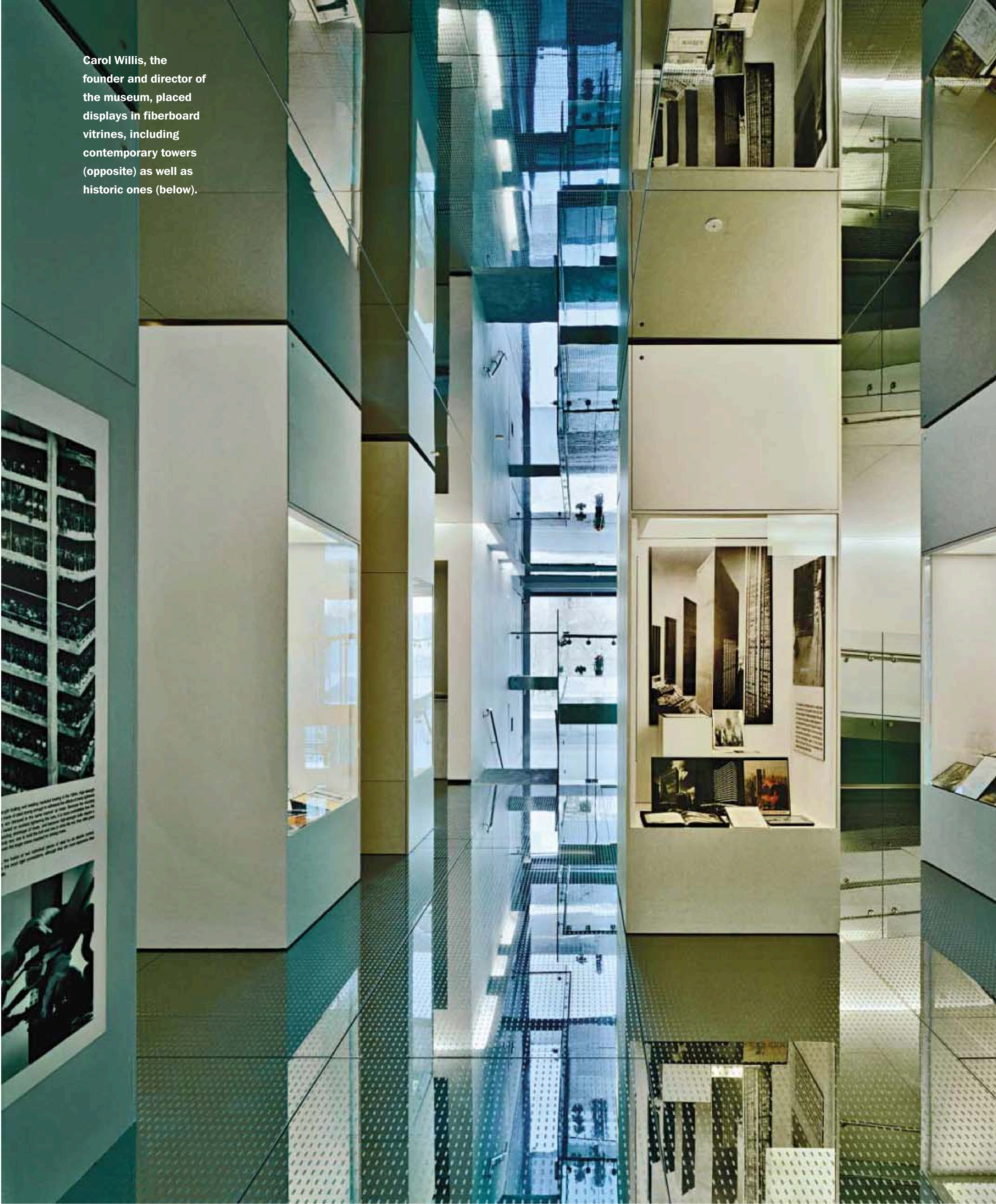
Raised floor system: *Tate Access Floors*

Ceiling panels: *Railtech*

Lighting: *NeoRay; Lightolier; Lutron*

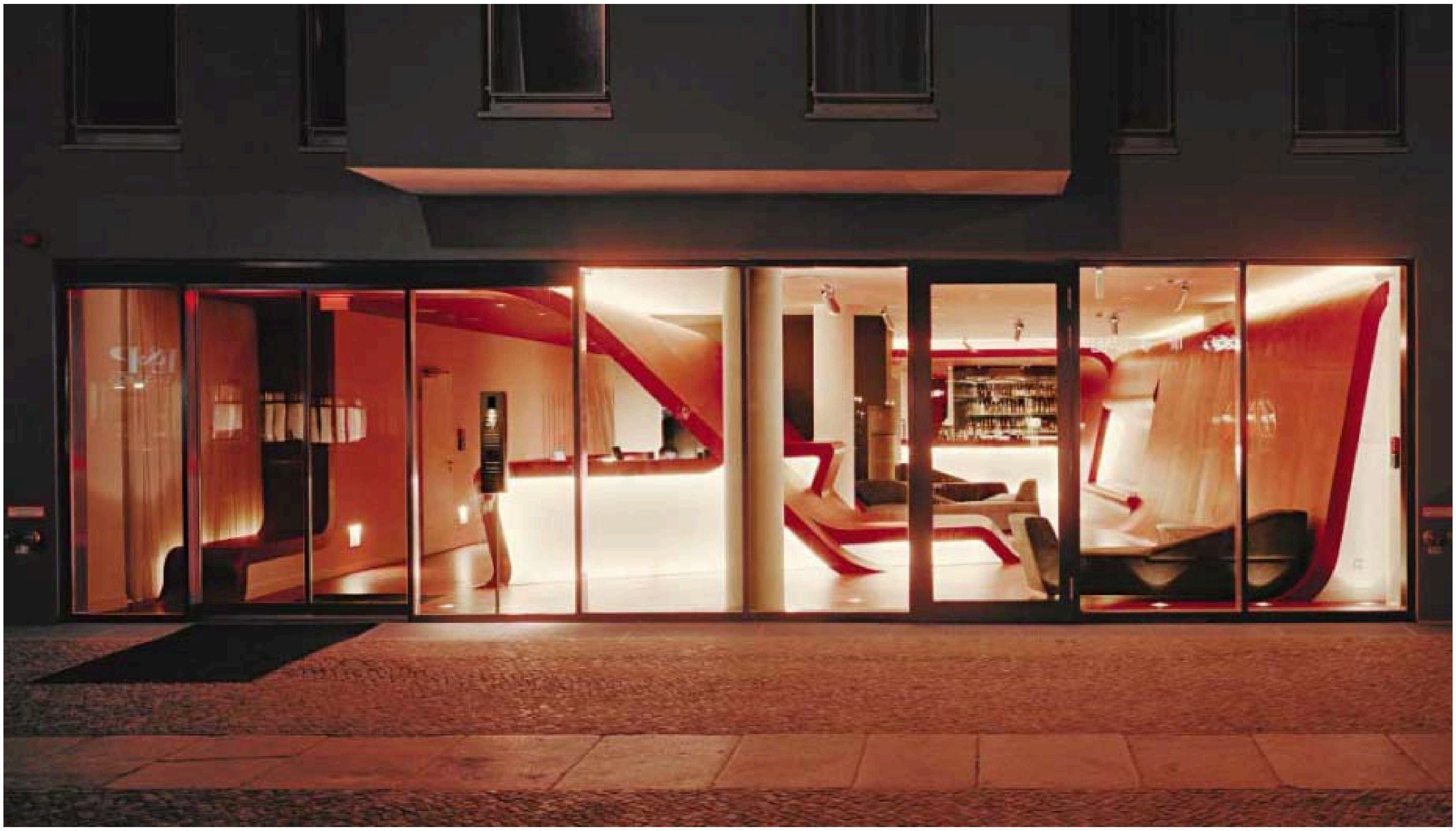
Graphic films: *Duggal Color Graphics*

For more information on this project, go to Projects at **www.architecturalrecord.com**.



Carol Willis, the founder and director of the museum, placed displays in fiberboard vitrines, including contemporary towers (opposite) as well as historic ones (below).

With undulant, folded planes, Graft animates the interior of Q!, a new hotel in Berlin, sensuously flowing walls into ceilings and furniture



PHOTOGRAPHY: © HIEPLER BRUNIER, EXCEPT AS NOTED; DIRK SCHAPER (OPPOSITE)

By Philip Jodidio

Look for luxury goods shops in any self-respecting European capital, and the immediate corollary, the "design hotel," can't be far away. Sure enough, in Berlin, around the corner from Chanel, Louis Vuitton, and Cartier, a new hotel so chic its entrance carries no name proves the rule. But for those who know where to look, Q! isn't hard to find. Within a relatively undistinguished gray facade, punched windows (of the sort commonly seen in this city) reveal the first hint that Q! stands apart from its neighbors in this high-rent district, just off the Kufürstendamm. From the street, white translucent curtains veil the hotel desk, but just through the glass front doors, the visitor enters a sea of wraparound, red surfaces that look more like California than New Berlin.

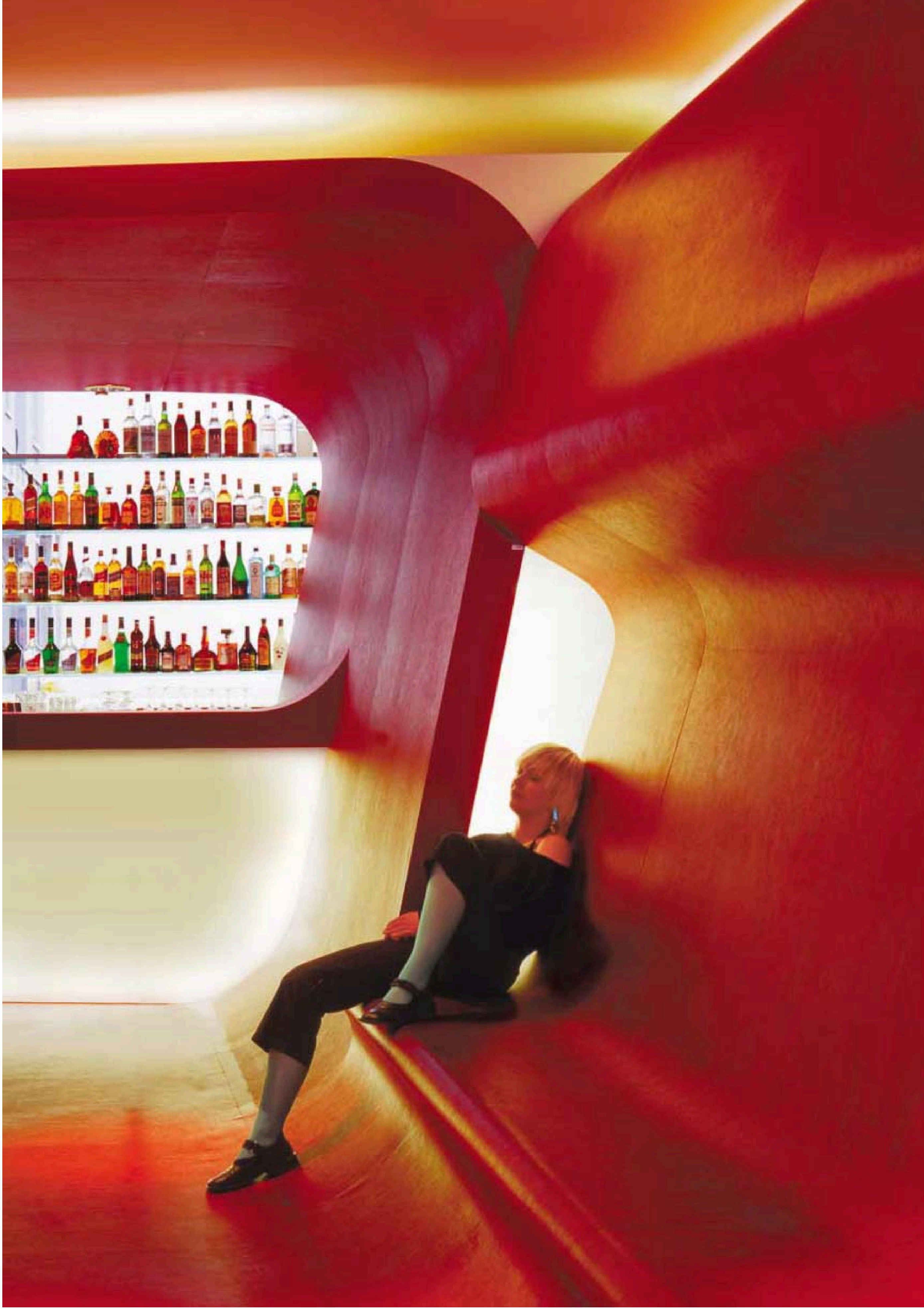
Flowing from the lobby into the lounge and restaurant, curvy, red-linoleum-clad surfaces glide seamlessly from floor to wall. Couches and built-in furniture similarly bear the mark of the architects, Graft, a young Los Angeles- and Berlin-based firm with a total of 20 employees. Its partners, Wolfgang Putz, Thomas Willemeit, and Lars Krückeberg, owe this commission more to Hollywood connections than German origins. Hotel operator Wolfgang Loock called them in 2002 after seeing an article on the Hollywood Hills studio they'd designed for actor Brad Pitt.

By the time Graft took on the interiors for this hotel—the firm's first—its developer had already selected an architect for the shell of this seven-story building, though construction had not yet begun. Graft shared little of that architect's sensibility, but managed to work with him nonetheless. After proposing a different facade (which was never realized), the partners accepted the delicate task of executing a challenging project with a low budget (approximately 1 million euros for the interior)

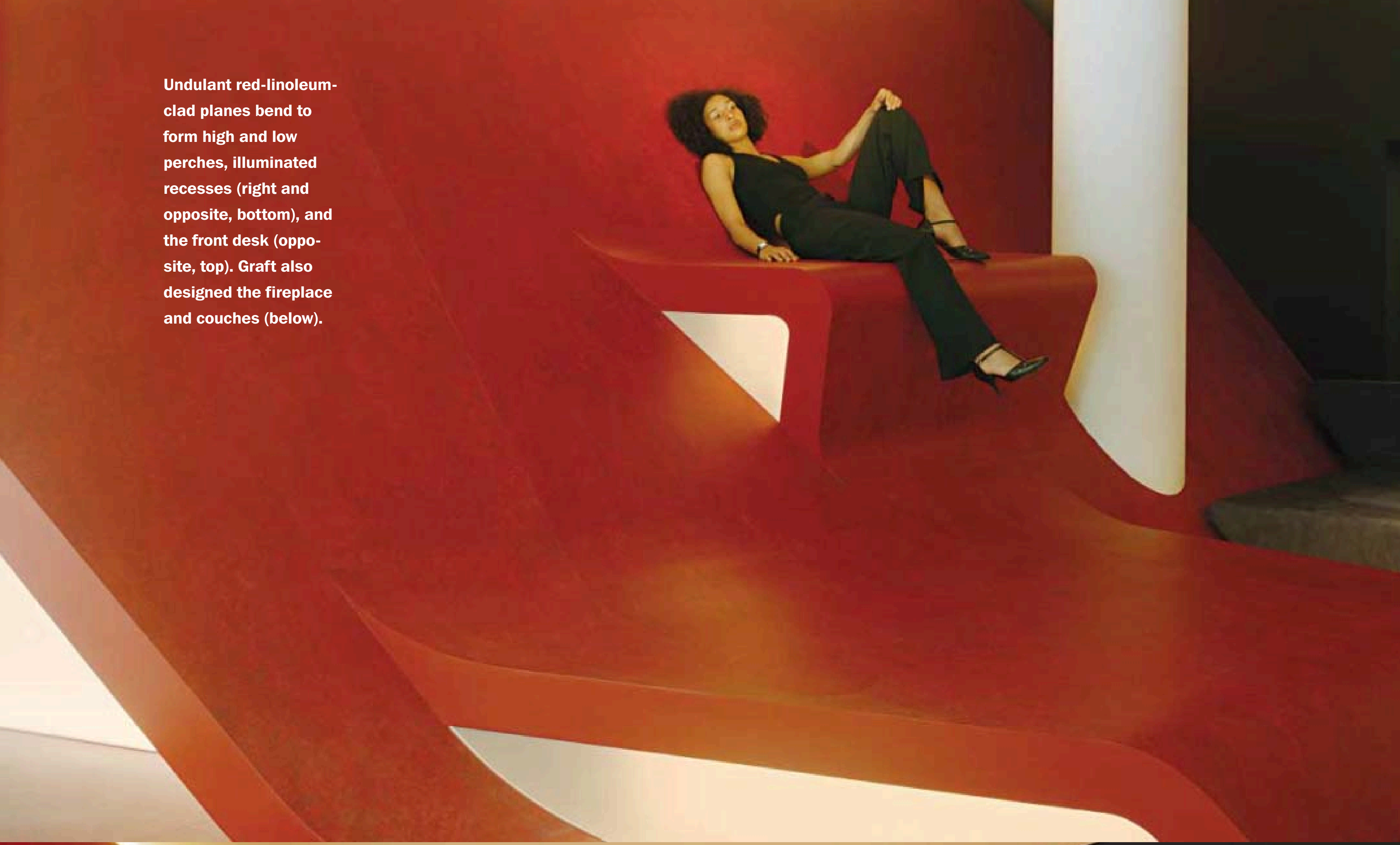
Philip Jodidio is a Paris-based journalist and the author of more than 20 books on contemporary architecture.

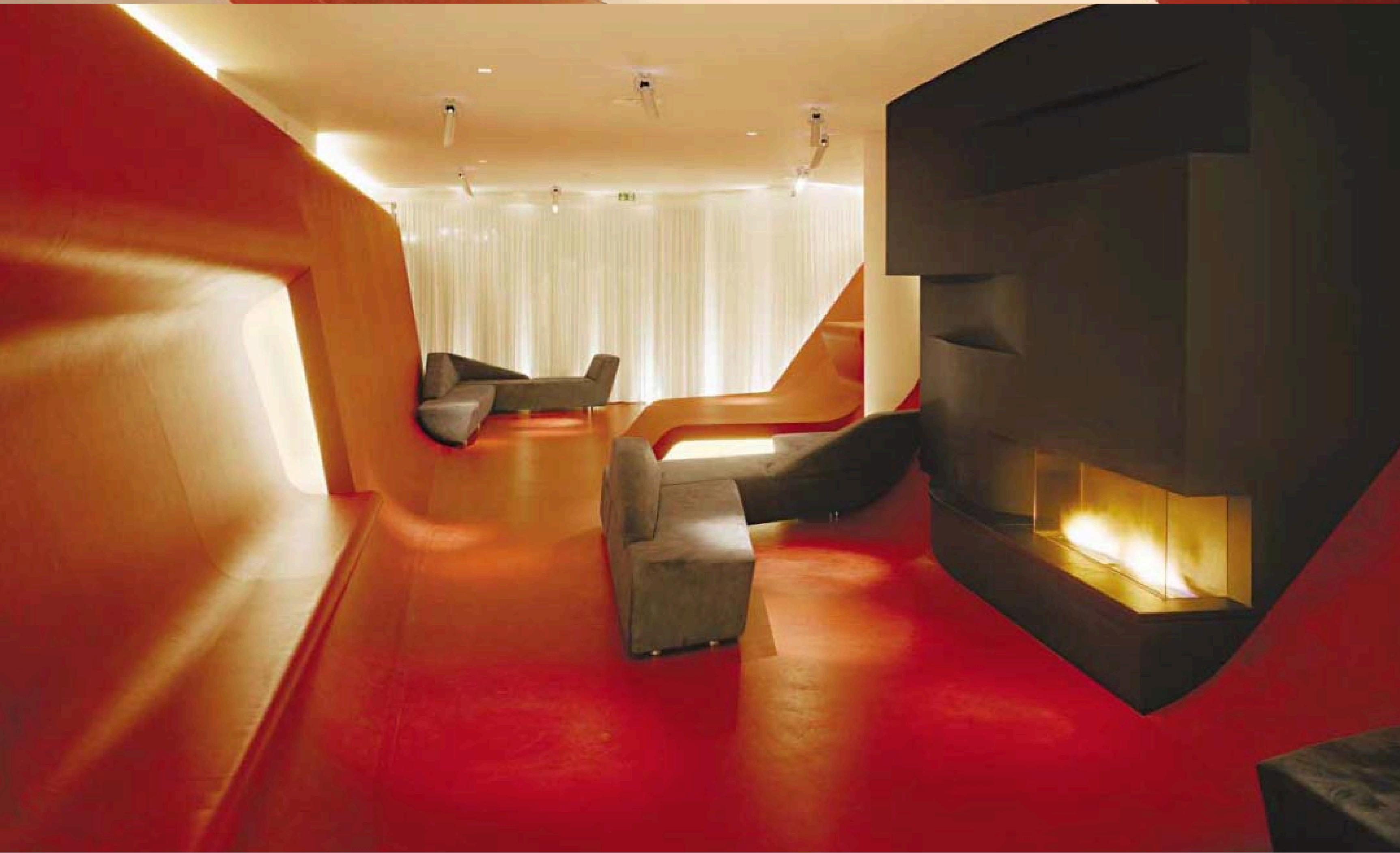
Project: *Q!, Berlin*
Architect: *Graft—Lars Krückeberg, Wolfram Putz, Thomas Willemeit, partners; Wolfgang Grenz, project leader; Johannes Jakubeit, Michael Rapp, Sasha Ganske, project team; Stephanie Bünau, Sven Fuchs, Lennart Wiechell, Leo Kocan, Nikolas Krause, Helge Lezius, participants*

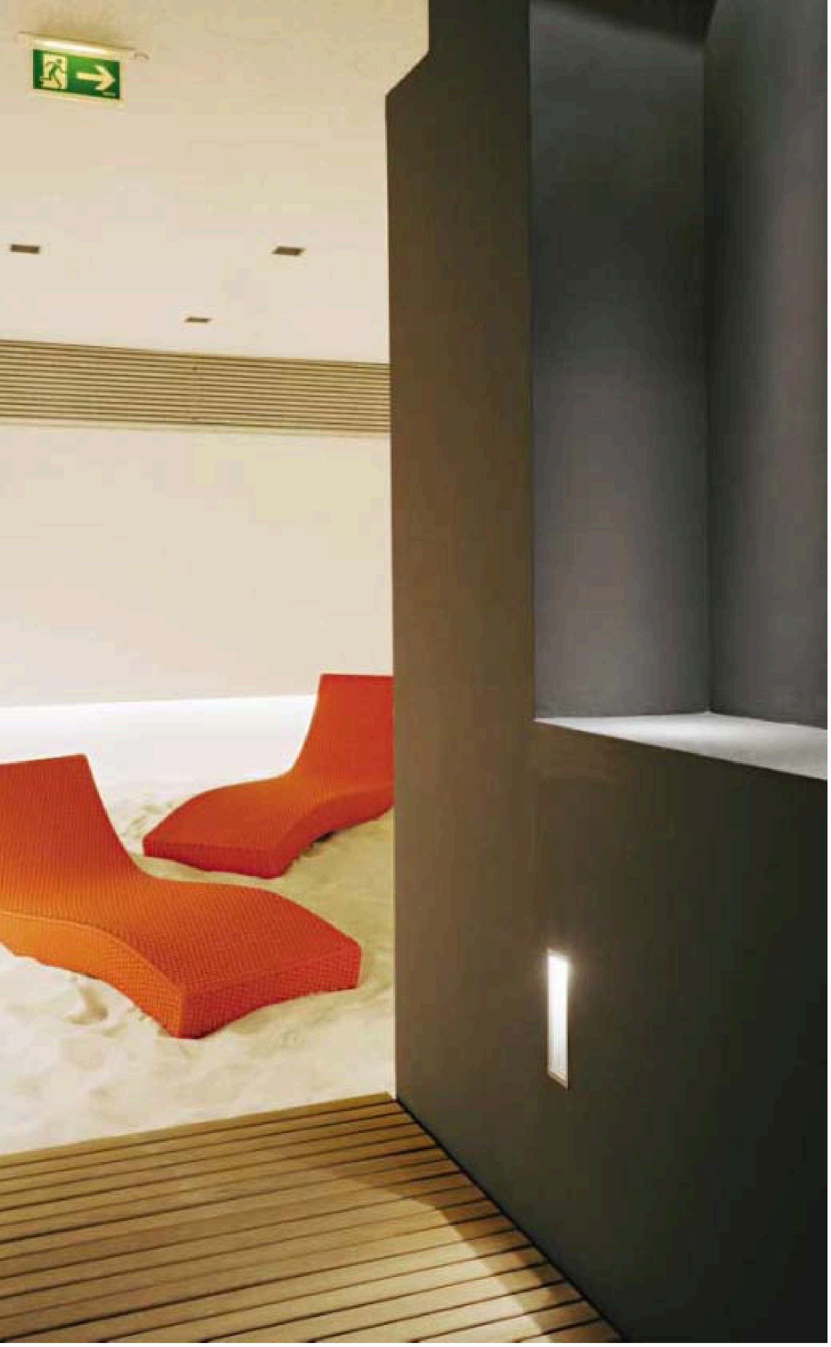
Visible from the exterior (opposite), folded red planes enliven the interiors. Inside, floors meld into walls, ceilings, and furniture, as at the bar (right).



Undulant red-linoleum-clad planes bend to form high and low perches, illuminated recesses (right and opposite, bottom), and the front desk (opposite, top). Graft also designed the fireplace and couches (below).

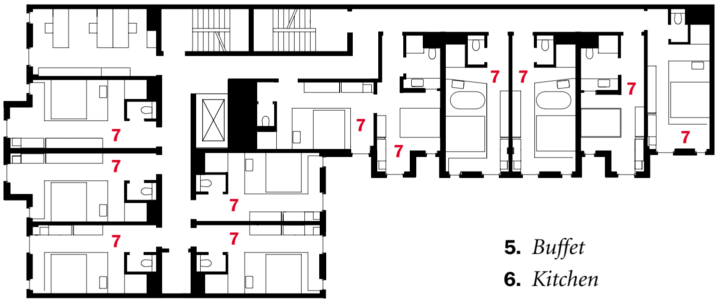






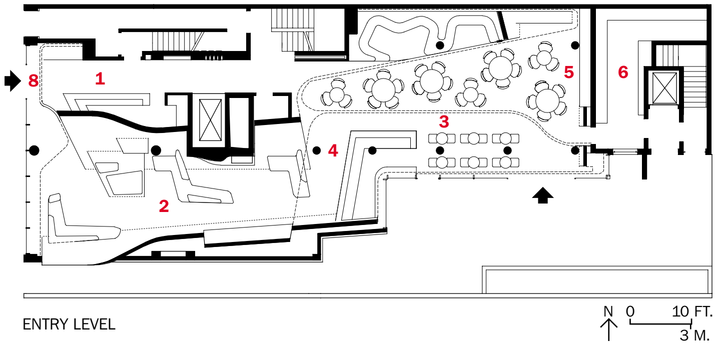
The spa, in the basement, includes a sandy "beach" lounge/cinema (left and bottom left) and black-terra-cotta-lined showers (opposite). Here, sculptural though rectilinear walls catch light and shadow, while incorporating shelves (opposite and below right).

1. *Reception*
2. *Lobby/lounge*
3. *Restaurant*
4. *Bar*

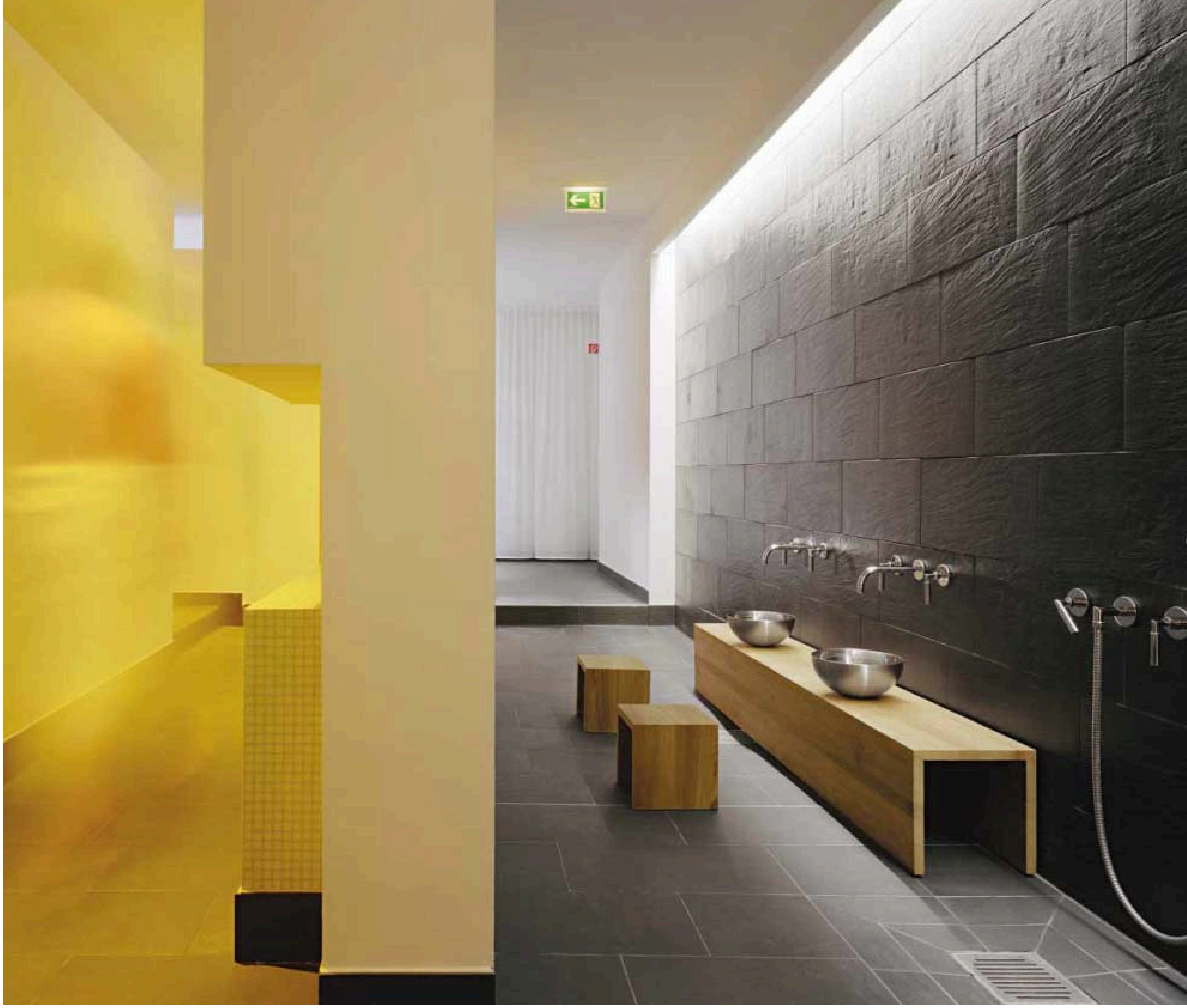


TYPICAL UPPER LEVEL

5. *Buffet*
6. *Kitchen*
7. *Standard guest room*
8. *Front entrance*



ENTRY LEVEL



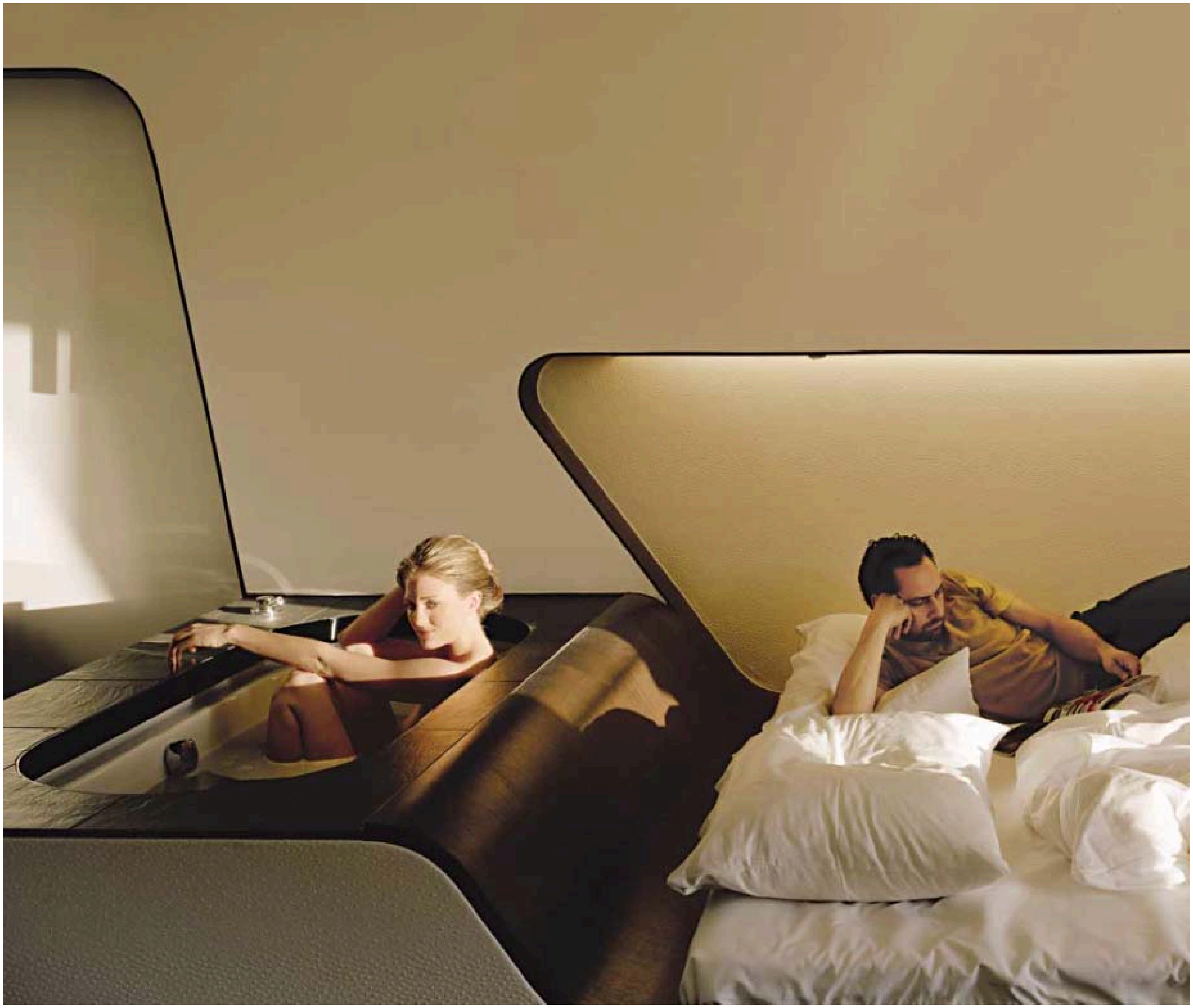
and a client perhaps not initially attuned to their ideas. Further constraints included an elevator and stair core already in place near the entrance and a small footprint, measuring just over 4,000 square feet.

Throughout the 32,000-square-foot building, Graft succeeded in imposing a unified aesthetic—one admittedly influenced by the folded planes of architect Neil Denari, who became director of Southern California Institute of Architecture (SCI-Arc) just after Putz and Krückeberg had completed their studies there. At Q!, continuous, streamlined surfaces wrap not only the street-level public areas but also the guest-room interiors, where the palette shifts to white against smoked-oak floors. Here, walls meld into desks and ceilings. Overhead, curved ceilings lightly printed with Christian Thomas's photographs of a woman, aim to give these quarters what Putz calls a "cocoonlike feeling."

Carefully thought out, the room designs favor an enveloping smoothness that does away with many everyday clues to designated function, such as door handles. Cupboards or light switches are not immediately visible. According to Putz, "We want the visitors to take a moment to orient themselves." Though sleek wrappers seem to be de rigueur in new design hotels, Graft crafted the aesthetic skillfully, conveying a sense of high quality through good workmanship, despite the low budget. What looks like slate in the bathrooms, for example, is really black terra-cotta, and so forth.

While the pale ceiling photos may recall Jean Nouvel's more forceful integration of movie images into his design hotel in Lucerne, Switzerland [RECORD, May 2001, page, 238], the Graft architects claim to have found inspiration elsewhere. They liken their work to a film storyboard—cinematic in its aspirations, whereas most Berlin architecture, suggests Putz, tends more toward still photography. The experience of working with Brad Pitt, he says, influenced Graft to consider architecture in these narrative terms. Whether in the bar or the guest rooms—where the bathtub sometimes melds with the bed—the architects imagined the space as a movie director might, envisioning the scenes with guests moving through the interiors, or sets.

Q! attempts to bring to Berlin the kind of style and design-consciousness of Philippe Starck's Saint Martins Lane (SML) hotel in



London [RECORD, January 2000, page 90], or other Ian Schrager properties, without spending a fortune. Although the Graft partners say they've never seen the inside of SML, it appears that the influences of Starck and Nouvel, in addition to Denari, have somehow filtered into Q!. Both the hotel's design and its service give a distinct impression of déjà-vu. But perhaps what seems refreshingly Californian in Graft's approach is its spirit of openness and optimism, transcending what the partners call "typical German skepticism." Instead of rejecting this project as impossible, with its tight space and means, the architects flowed the smooth curves of contemporary design into a hard-angled, gray Berlin box—no small feat. ■

Sources

Linoleum: *Marmoleum*

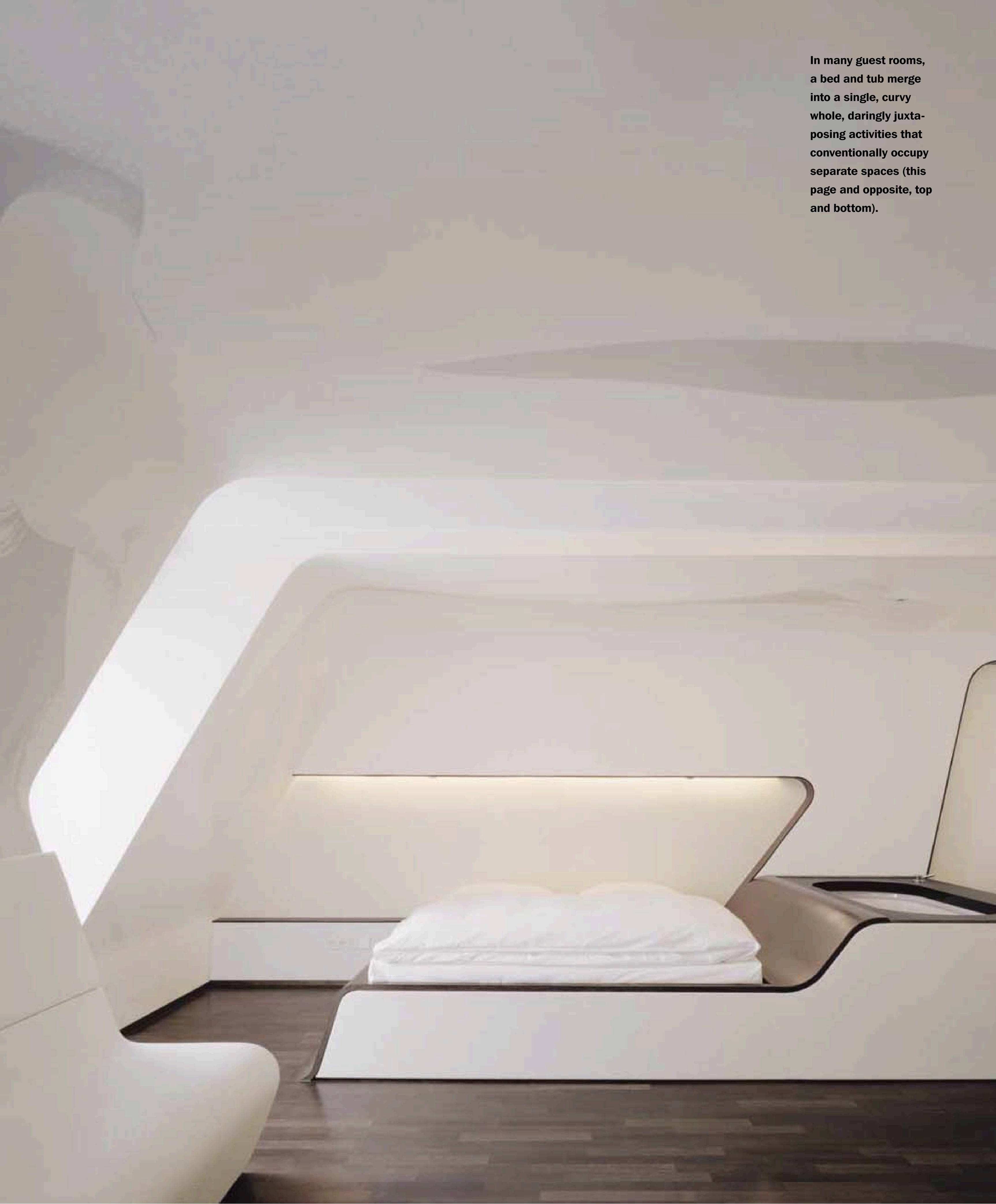
Furniture: *Vitra; Fussgestell; Alias; Moroso; Paola Lenti; ArtifortLande; La Palma; Tischplatte*

Sinks: *Duravit*

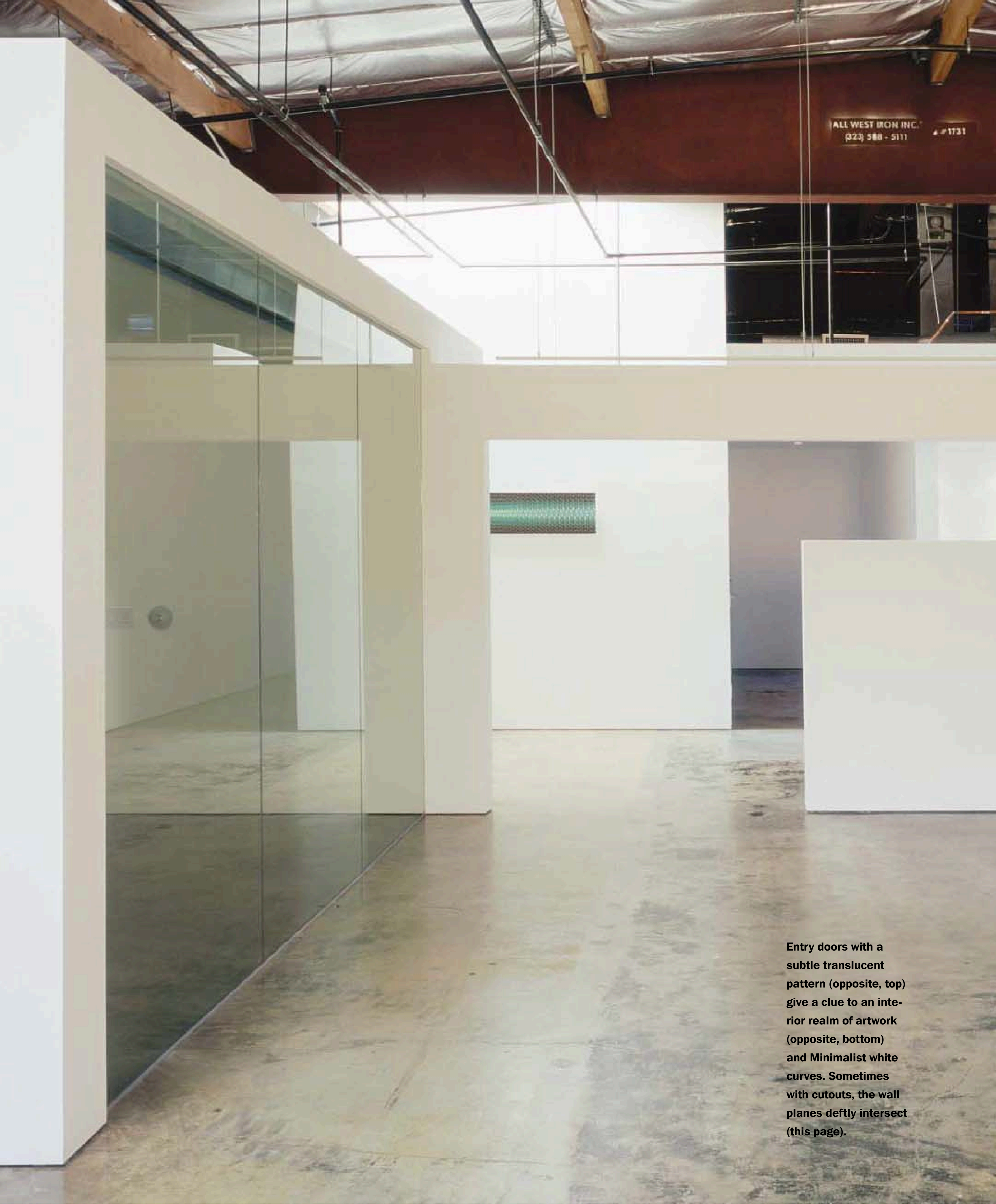
Shower fixtures: *Dornbracht*

Tiles: *Atala; Sicis*

For more information on this project, go to Projects at **www.architecturalrecord.com**.



In many guest rooms, a bed and tub merge into a single, curvy whole, daringly juxtaposing activities that conventionally occupy separate spaces (this page and opposite, top and bottom).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Entry doors with a subtle translucent pattern (opposite, top) give a clue to an interior realm of artwork (opposite, bottom) and Minimalist white curves. Sometimes with cutouts, the wall planes deftly intersect (this page).

Wielding curvy white walls, **Studio 0.10** interweaves galleries, casual lounges, and state-of-the-art sound studios at **AZLA**

By Sarah Amelar

The plain brick exterior of AZ Los Angeles (AZLA) gives few clues to what lies within. Except for an address number, no sign identifies this one-story industrial building across from a car-towing lot in Santa Monica, California. Like an exclusive club, quietly making an anonymous wrapper and in-the-know clientele part of its caché, this boxy shed reveals only a glint of its interior realm: just a pattern of translucent rectangles playing across its glass entry doors.

Inside, AZLA offers facilities for engineering, recording, and composing music, voice-over, and dubbing tracks for radio, television, and film. With the gradual westward migration of Los Angeles's post-production sound industry, the studio and a cluster of others recently settled in this district, squeezing out much of the neighborhood's grittier old guard (though the car lot remains).

Here, in a city of ephemera and competitive image making, even the sound people need to keep reinventing their look. For AZLA's new location, the latest in acoustic and electronic technologies simply wouldn't have been enough: A freshly revamped identity was clearly in order. With two recording and editing rooms, plus one state-of-the-art surround-sound studio—a rare offering in a small, independent facility—the Peruvian-born owner, Alonso Zevellos, envisioned a place where he could also exhibit his extensive collection of Contemporary and Minimalist art, throw chic parties, and provide a casual hangout for the right crowd.

He challenged his architects, partners Andrew Liang and Li Wen of Studio 0.10, to transcend the sound industry's aesthetic cliché, which Liang characterizes as "steely, high-tech, and muscle-flexing with incense-burning, bohemian touches." Besides creating a salon atmosphere and accommodating complex technological requirements, the architects would have to choreograph a space where clients could enter, exit, and work without running into competitors (likely fellow clients)—and without feeling constrained or corralled.

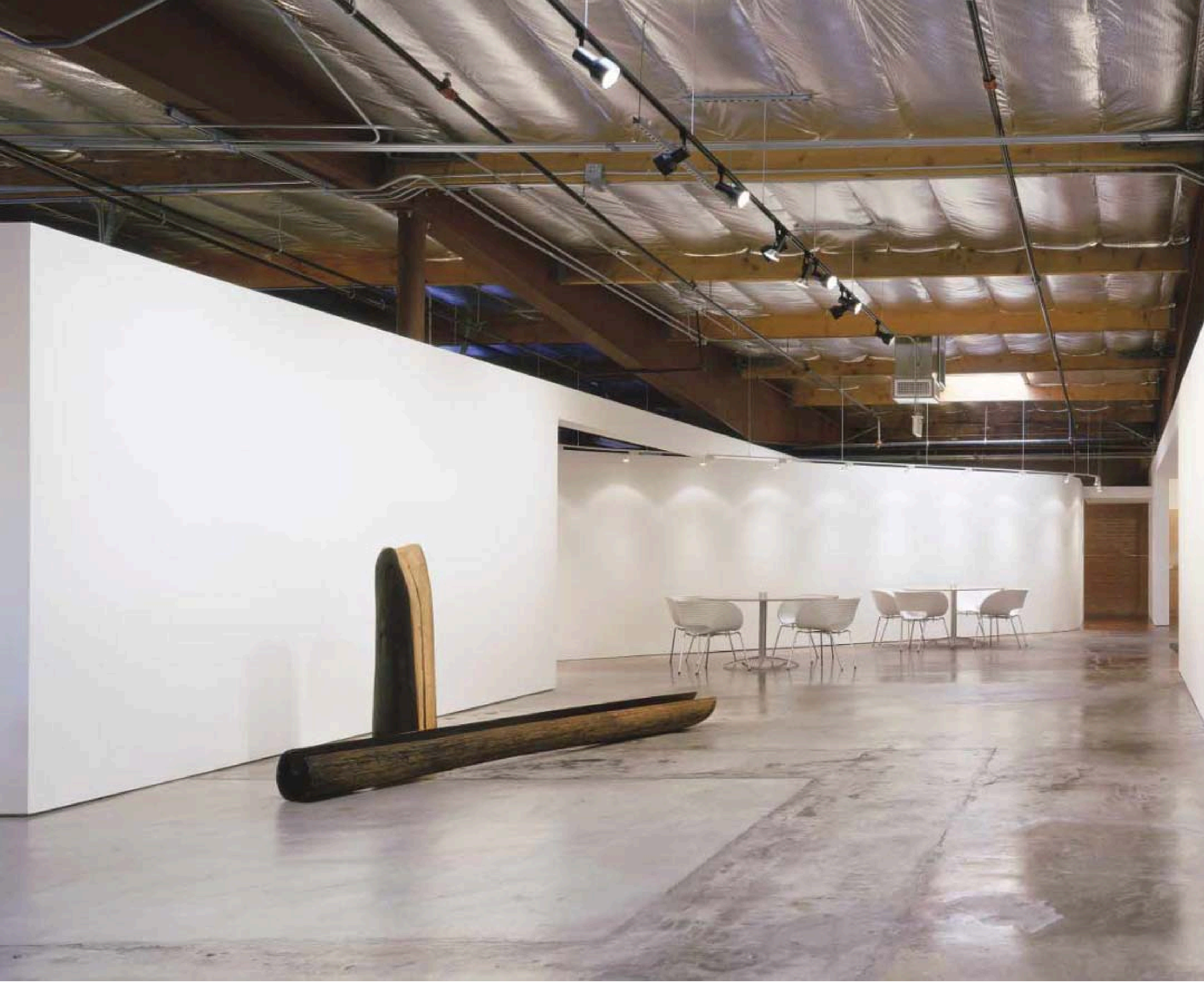
With a light touch, the architects positioned long, curving white walls to separate distinct functions and gently guide movement through the 15,000-square-foot space. Though the plan recalls the sequential shunts of pinball machines, its 3D reality appears purely sculptural. The smooth walls seem to slip past one another—occasionally bending overhead or intersecting—enhancing spatial flow, rather than imposing barriers. By keeping these white elements from reaching the ceiling and by raising them from the floor with deeply recessed reveals, Studio 0.10 retained a sense of fluidity, free of encumbrances. Interior views appear wide and panoramic.

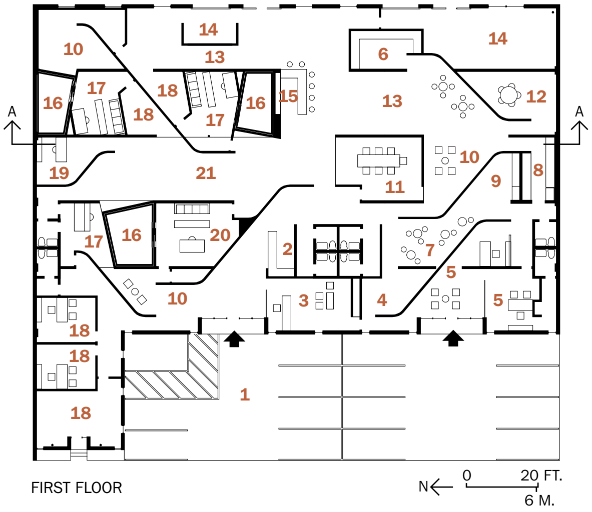
A nearly invisible band of butt-joined glass—sometimes turning an unexpected, optically illusive corner—provides full enclosure where needed while maintaining visual openness over the tops of the partitions. Reminiscent of the white sweep of New York City's Guggenheim Museum, the walls become curving backdrops for Zevellos's collections of sculpture, painting, and mid-20th-century Modernist furniture. Along with sleek chairs and tables, many by Charles and Rae

---

Project: *AZ Los Angeles, California*
Architect: *Studio 0.10 Architects—Andrew Liang, Li Wen, principals; Eiko Amada Ano, project leader; Gregory Haynes, project team*
Structural engineer: *Martin Gantman*
Acoustics: *Ilbruck*
General contractor: *Benchmark MPE*

PHOTOGRAPHY: © FOTOWORKS/BENNY CHAN, EXCEPT AS NOTED; JOHN EDWARD LINDEN (TOP)





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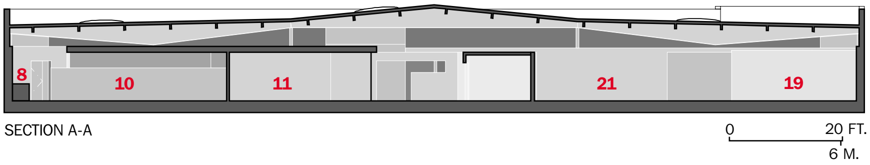
FIRST FLOOR

1. *Parking*
2. *Reception*
3. *Video viewing*
4. *Accounting*
5. *Executive*
6. *Graphics station*
7. *Internet café*
8. *Kitchen*
9. *Copy/fax*
10. *Lounge*
11. *Conference*
12. *Lunch*
13. *Gallery*
14. *Storage*
15. *Bar*
16. *Recording studio*
17. *Engineering studio*
18. *Producer*
19. *Programming head*
20. *Surround sound*
21. *Corridor*



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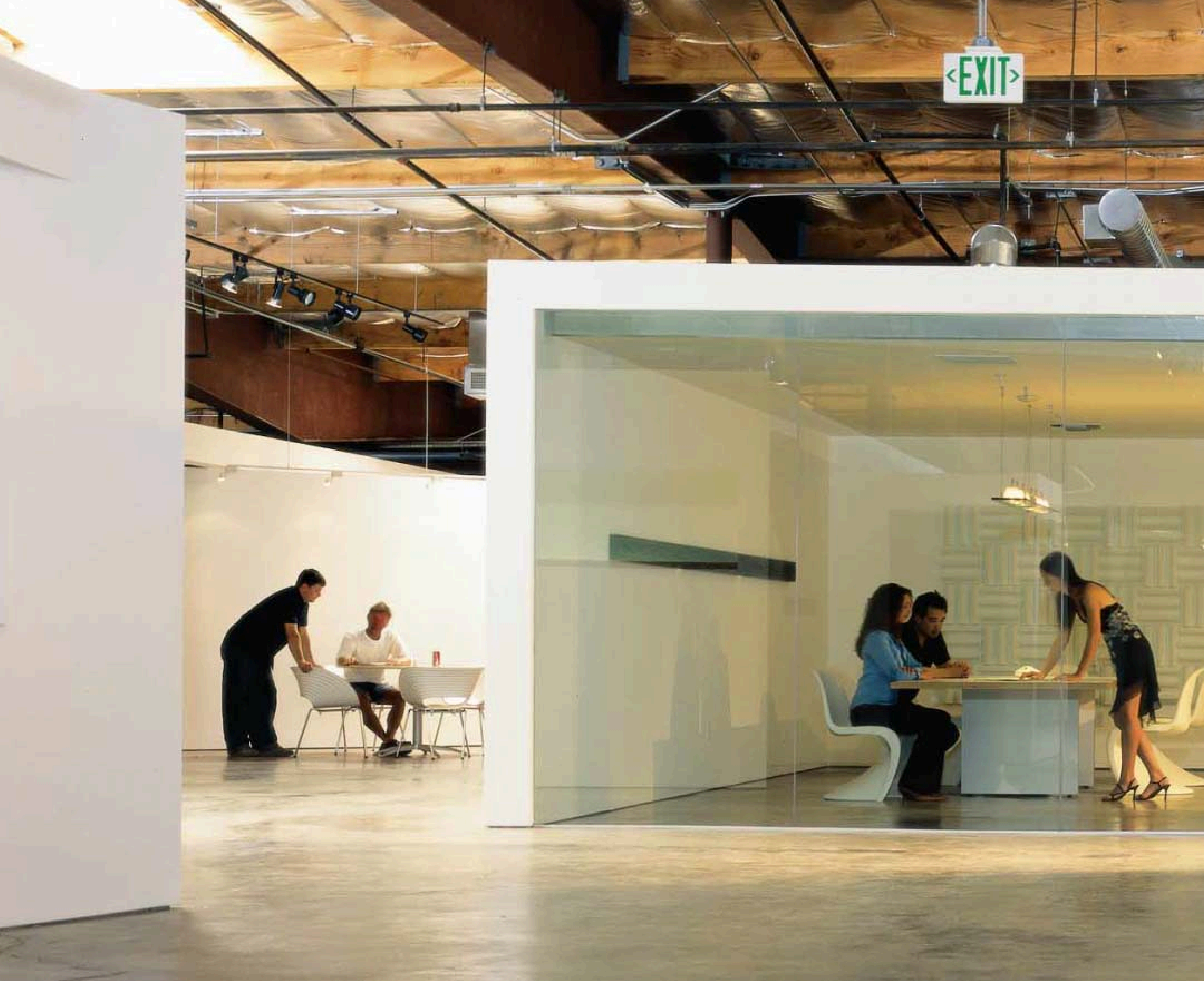
SECTION A-A

Sleek Modernist furniture, including Eames pieces (below right), and a glazed conference room (above) play against the rough-hewn textures of exposed concrete floors, roof timbers, and insulation.



Eames, the streamlined partitions (actually painted wallboard) play against the existing concrete floor, resealed but worn with time and industrial use, and the open plenum overhead, revealing timber beams, ductwork, and insulation. These rough-hewn surfaces (retained, in part, as a budgetary solution) offer a textural counterpoint, as well as a strong horizontal continuum throughout the space.

By design, AZLA refrains from announcing itself as a sound studio, especially in its entry area and other communal zones. While perceived openness and exposed industrial elements play essential roles, the architects intentionally concealed, or inverted, the operation's technological brawn and vascular underlay of cables, opting instead for sleek understatement.

But behind the long Minimalist curves lie practical, competitor-shielding systems of individual exits and entrances, as well as chambers calibrated and layered for acoustic precision. While discreetly hiding the mechanisms, the sinuous interplay of white planes finesses the separation between public and private, creating a variety of casual break-out and support spaces—lounges, galleries, a bar, and a kitchen—for artists and editors working long, intense hours in sound seclusion. In a central position, a crisp white box forms a freestanding conference room, sealed by a large aquariumlike window but fitted with shades for optional privacy.

Equally nuanced are the sources of illumination—both natural and electric. Preexisting industrial skylights bring sunlight deep into the interior. The rays, curves, shadows, reflections, and rhythms of fixtures all work together in dynamic harmony, playing off a single tone of paint. As AZLA's clients fine-tune the rich colors of sound, the spaces around them become animated in the many shades of white. ■

Sources

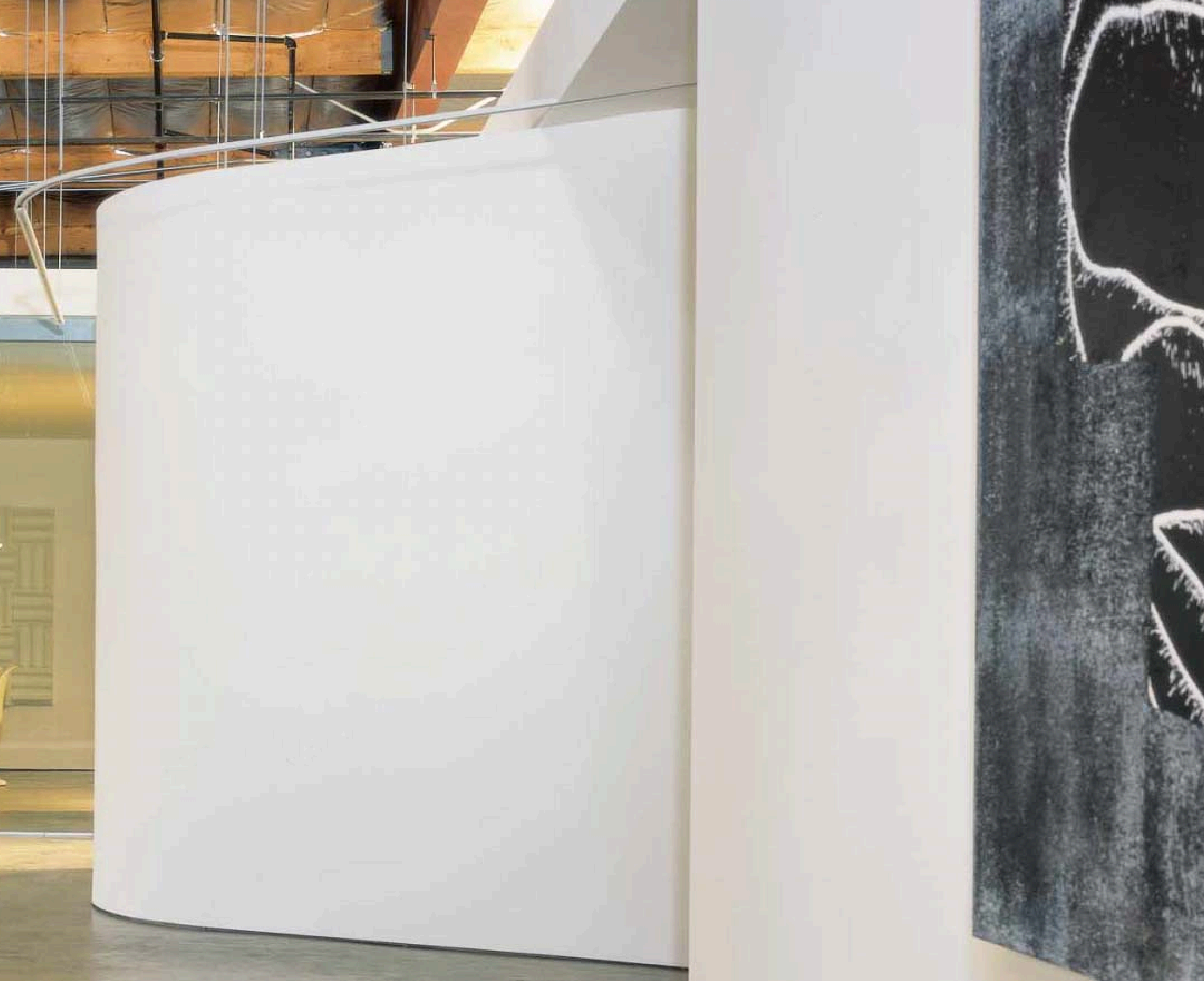
Paint: *Dunn-Edwards*

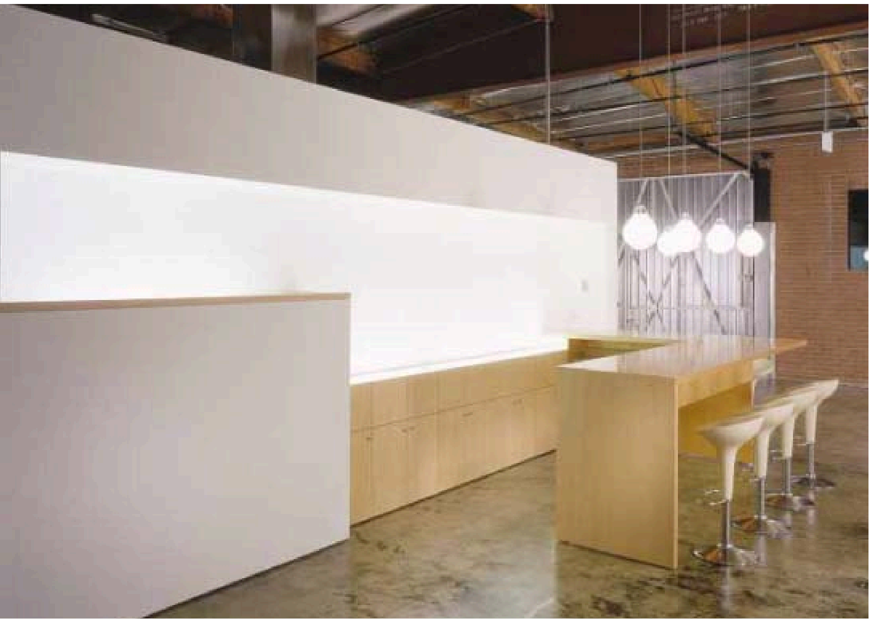
Lighting: *Flos; Louis Poulsen; Illuminating Experiences*

Acoustic materials: *Sonex; Ensolite*

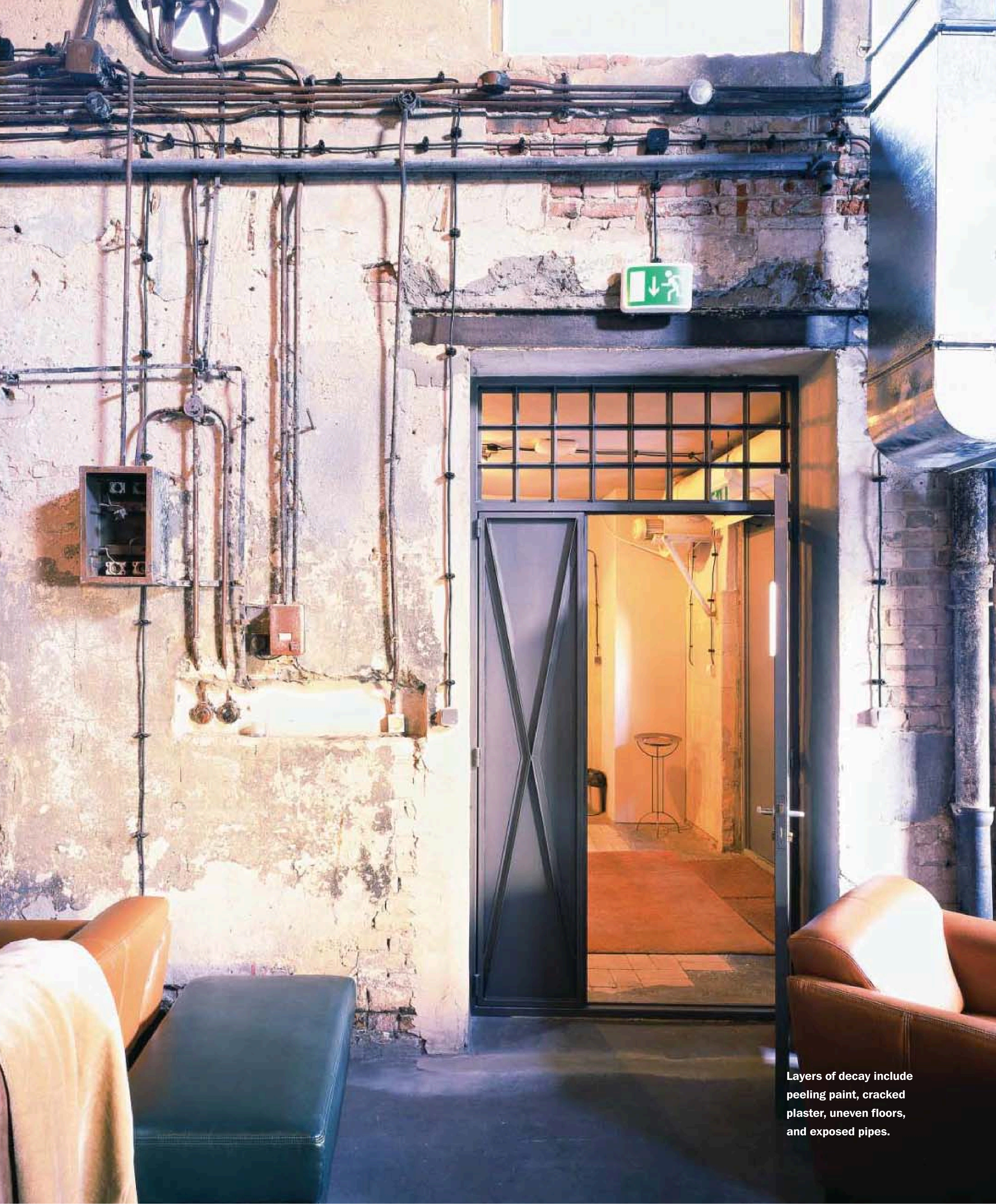
For more information on this project, go to Projects at **www.architecturalrecord.com**.

PHOTOGRAPHY: © JOHN EDWARD LINDEN (TOP SPREAD)



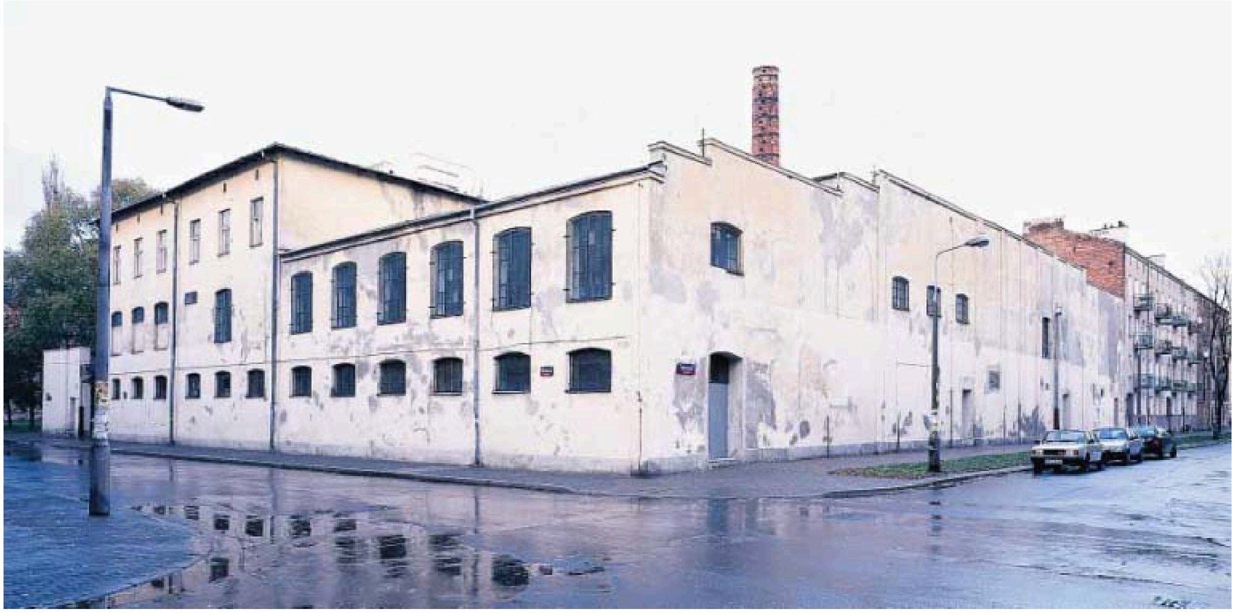


Open to view, the meeting room (above) can be concealed by shades. AZLA's amenities include a bar area (far left). The curving walls, beneath hovering lighting tracks, shape the space and virtually become abstract sculptures in themselves (left). Their smooth, white surfaces play against the patina of worn concrete floors.



Layers of decay include peeling paint, cracked plaster, uneven floors, and exposed pipes.

Valuing the scars of time, Kulczynski Architects turns a derelict factory into a vibrant cultural center at FABRYKA TRZCINY in Warsaw



PHOTOGRAPHY: © JAN SMAGA

By Sam Lubell

In transforming a dingy, abandoned meat-processing plant into the now-thriving Fabryka Trzciny art center, the Warsaw firm of Kulczynski Architects had a rather unusual stipulation: The more decay, the better. The team chose to explore the character of a building that comes only from years of grime, wear, and neglect.

Industrial grit, of course, is de rigueur in many new arts spaces, bars, and lofts. One has only to think of Mass MoCA in Massachusetts or Dia:Beacon in New York to attest the popularity of turning old factories into art havens. But such fashionable grime comes with a clean finish: a sense that everything is orderly and neat underneath the messy facade. Not so at Trzciny, a 19,000-square-foot space built in 1916 in the city's Praga district, now an increasingly popular manufacturing-turned-artsy area.

"It's so hard to find places like this in Warsaw," says Yacine Diallo, an architect on the project. "Everything [new] here is either high-tech or Minimalist. This was something completely different."

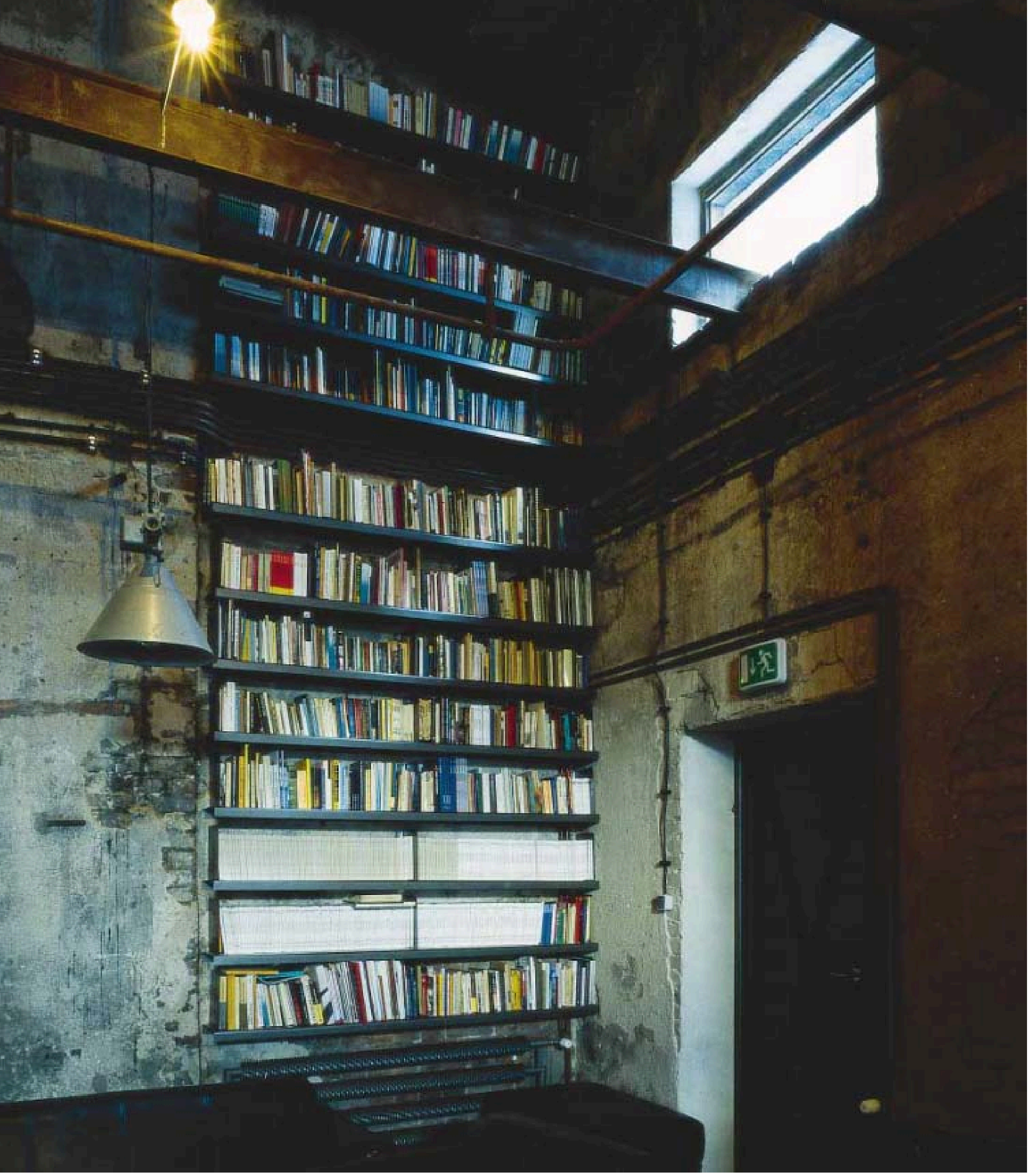
The architects had to engage creative problem solving to retain as many of the plant's original features as possible while simultaneously preventing more deterioration, bringing the building up to code, meeting a modest budget—and appealing to young Poles. The program for the lofty space, with ceiling heights of about 12.5 feet, included a 2,045-square-foot performance area, in the former boiler room; a 2,658-square-foot restaurant/concert space; three bars; a cavernous, white-walled gallery; an exhibition area crowned by a massive wood barrel vault; and a light-infused lobby that doubles (with blinds drawn) as a film screening room.

Few walls were demolished, and most surfaces remain untouched. Large pockmarks and discolorations still mar the facade, while many interior walls, like those in the lobby and boiler room, bear uneven paint and brickwork, exposed old pipes, and deep gashes. Diallo views these scarred remains as paintings of sorts: poignant visual reminders of the effects of time. Bare light bulbs illuminate most rooms, and many floor surfaces, which the firm left untouched, resemble your grandmother's linoleum tile, only they're a shuffled mix of materials, changed and repaired over time, looking in places as if they'd been jackhammered by an angry contractor.

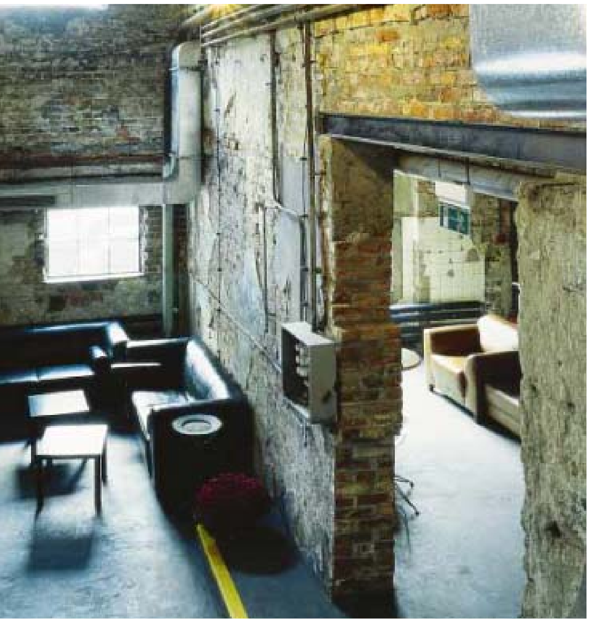
Responding to practical needs, the firm sandblasted all surfaces and coated them with clear sealants to halt decay and dirt buildup. Some hallways required lengthening to satisfy building code. The team rebuilt the bathrooms (fashioned from W.C. cabins of decommissioned trains) and kitchens with a glossy, bright red finish that seems antithetical to the overall design, but was meant, Diallo says, to lend a contemporary touch and a bit of fun. The team has also overhauled the electrical and HVAC systems, as evidenced by a few shiny new pipes and ducts snaking through the clutter.

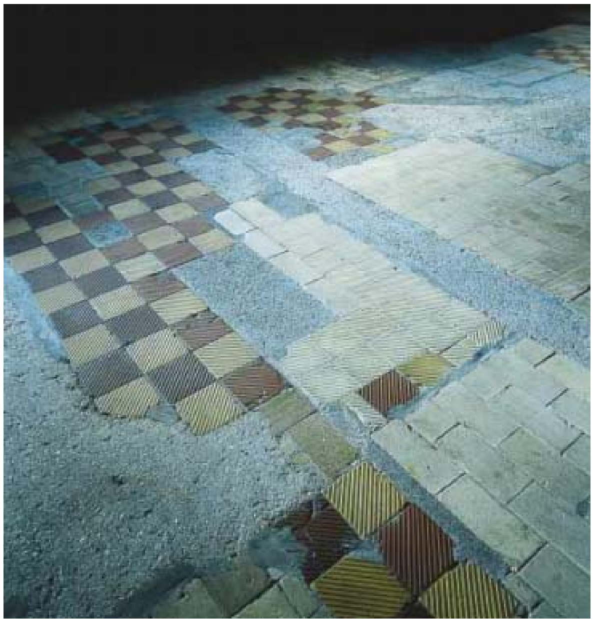
To further update the aesthetic, the bar at the art center's restaurant—a sophisticated spot serving Polish and Continental fare and hosting

Project: *Fabryka Trzciny, Warsaw*
Architect: *Kulczynski Architects—Bogdan Kulczynski, Joanna Kulczynska, Yacine Diallo, Agnieszka Chmielewska, design team*
Engineers: *Roman Nalewajko (structural); Anrzej Dziduch (electrical)*



A large bookshelf in the former boiler room (left) invites reading and reflection. Shiny new pipes and ducts in one of the loftlike spaces (bottom left) indicate the completely overhauled HVAC and electrical systems. Uneven floors (bottom right) show various stages of factory development. Magenta-colored methanol bottles (opposite, top) create a mesmerizing bar backdrop. Industrial relics evoke memories of a long-past era (opposite, bottom left). New bathroom stalls (opposite, bottom right) reuse the W.C. cabins of decommissioned Polish National Railway cars.





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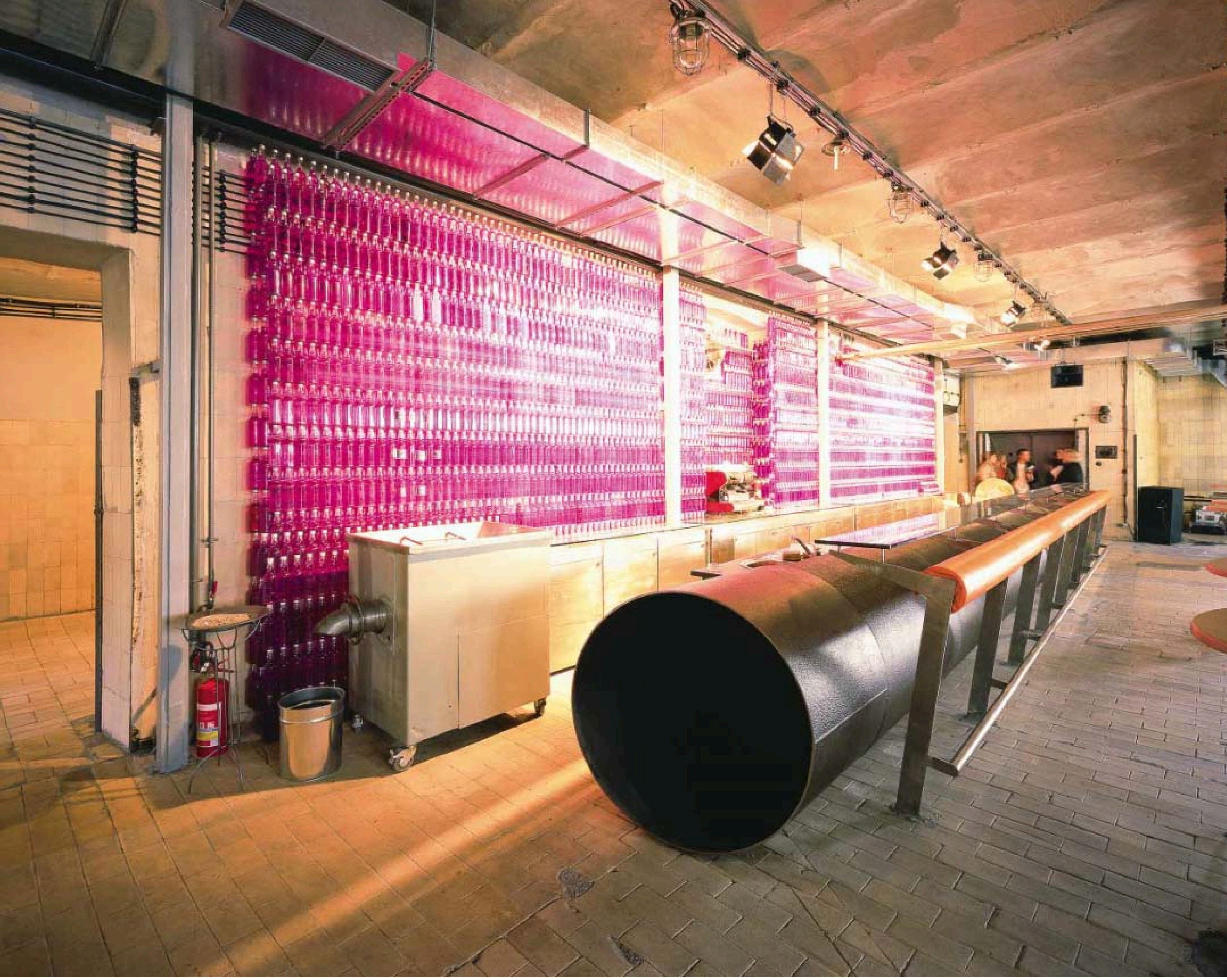
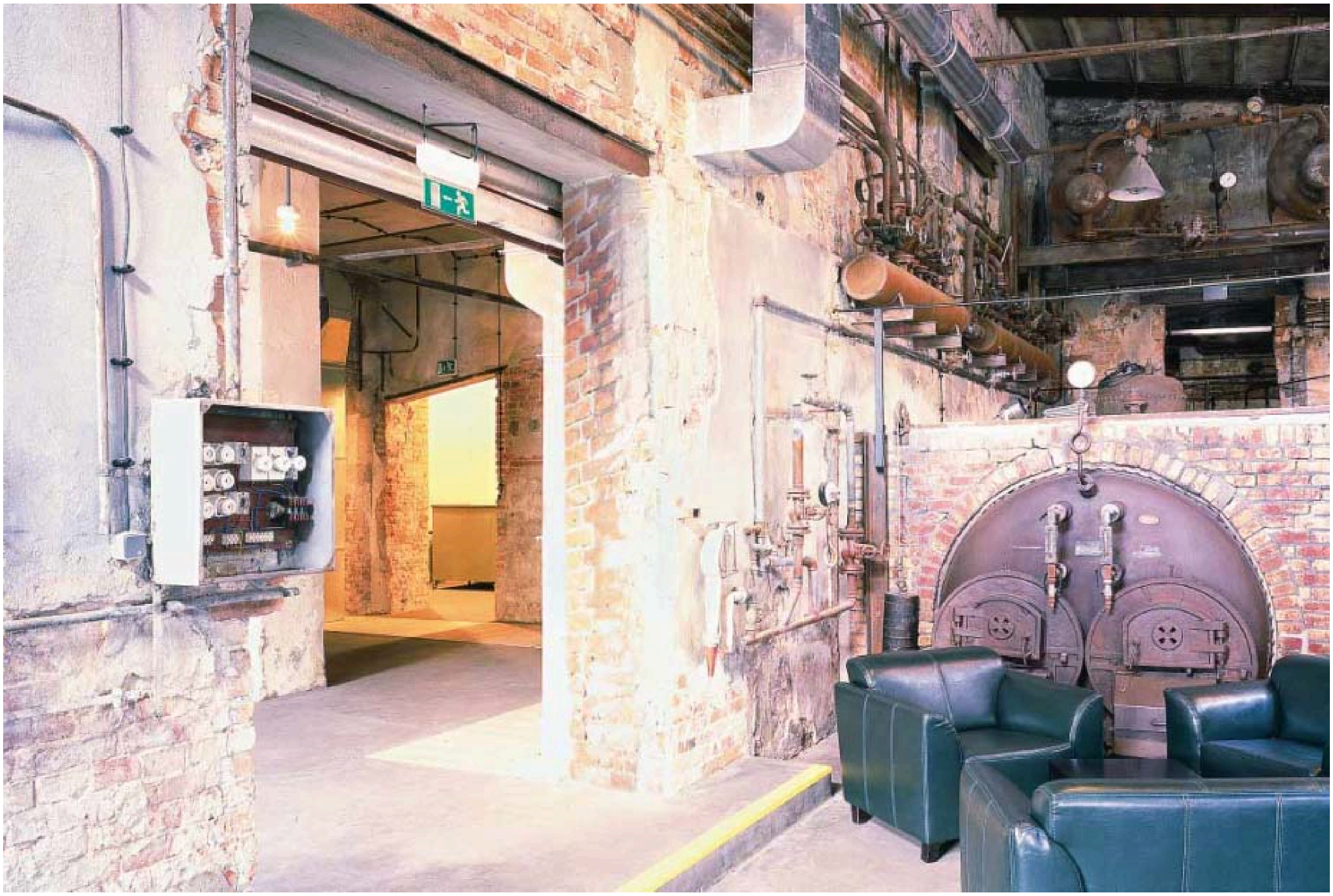
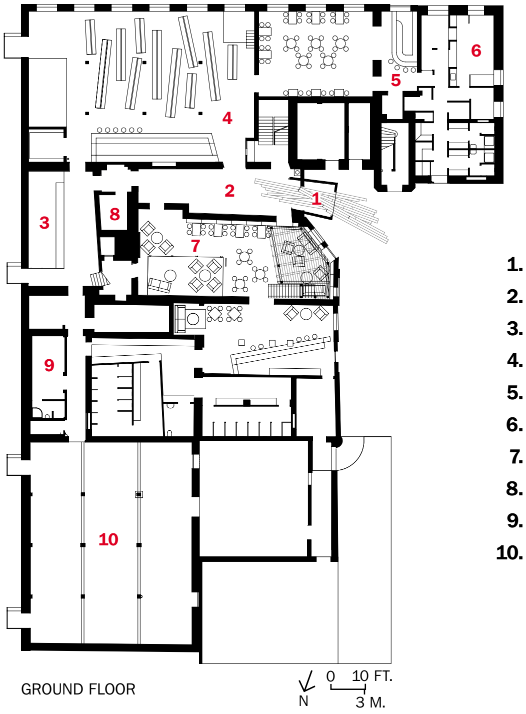






1. *Porch*
2. *Lobby*
3. *Cloakroom*
4. *Restaurant*
5. *Bar*
6. *Kitchen*
7. *Former boiler room*
8. *Storage*
9. *Dressing room*
10. *Gallery*

raucous concerts—features a backdrop of 4,000 magenta-colored methanol bottles (recalling the methylated spirits sometimes imbibed in the past by poor Poles who couldn't afford liquor), stacked in rows behind a 30-foot-long steel pipe topped with a glass counter. Lit by reflectors, the bottles produce a mesmerizing glow. The team intelligently mixed such contemporary touches with historic remnants. Behind another first-floor bar, newly stacked electrical dials, collected from around the factory, intensify the industrial imagery. The old boiler room has become a performance space, with a furnace, 5 feet high and 21 feet across, transformed into a stage.

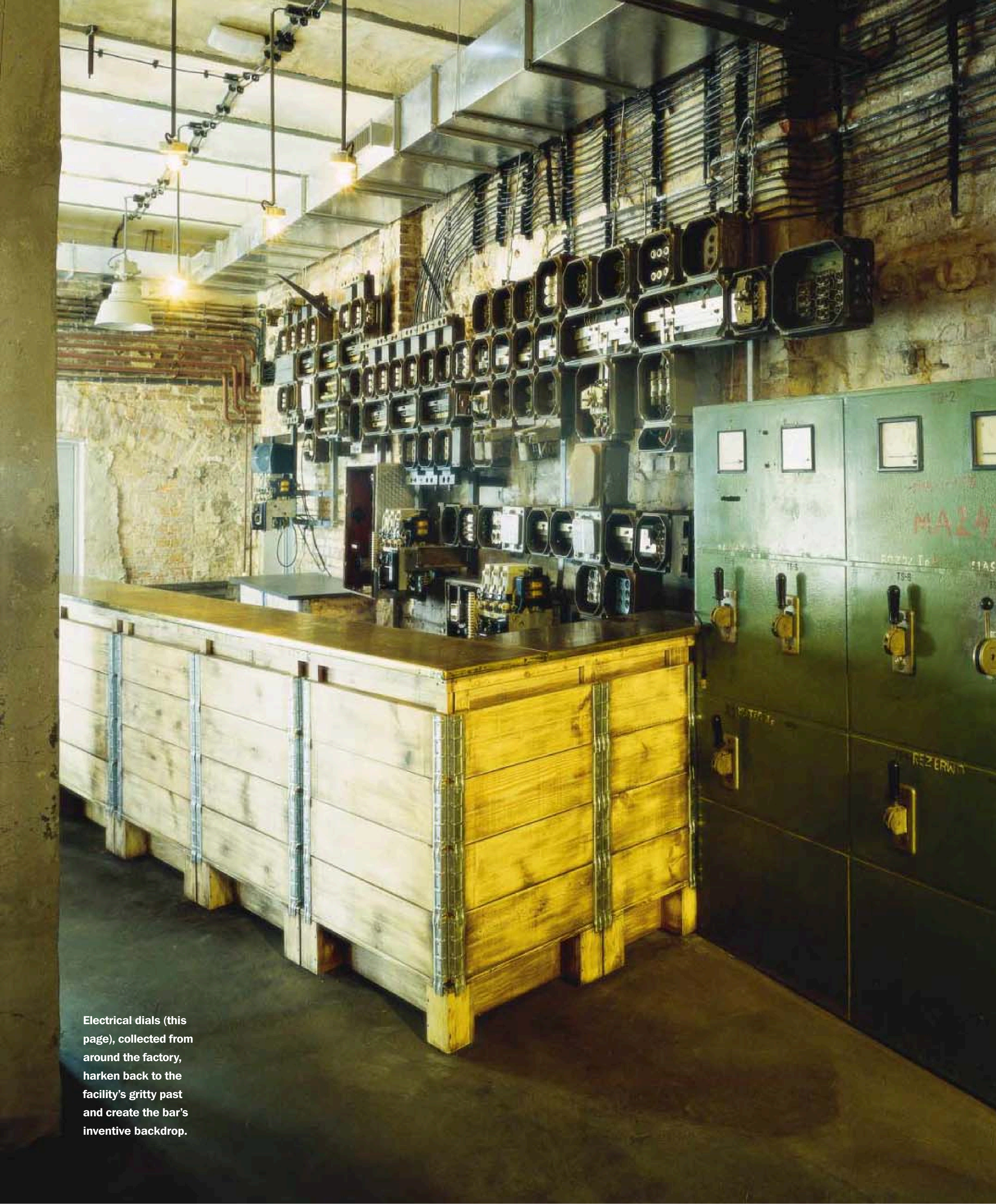
In Fabryka Trzciny, the architects embraced an unconventional aesthetic (call it "shabby, shabby, shabby chic")—probably no one would call the place beautiful. But its originality and boldness, even in a time of industrial-theme overload, resonate. The firm has created an invitingly unpretentious spot for a diverse crowd that includes artists, students, businesspeople, fashion designers, and even pop stars. Entry lines on many nights, Diallo claims, snake out the door. The owner, a local music promoter, wanted to evoke the atmosphere of the clubs he'd frequented as a youth; places that (along with illicit behavior) fostered creativity, talking, and dreaming—unlike Europe's often cold, techno-music-dominated social centers, as Diallo points out. Walking from room to room, one feels the urge to break free of established notions of "cleanliness" and "beauty," favoring risk-taking edginess over the predictability of order. ■

Sources

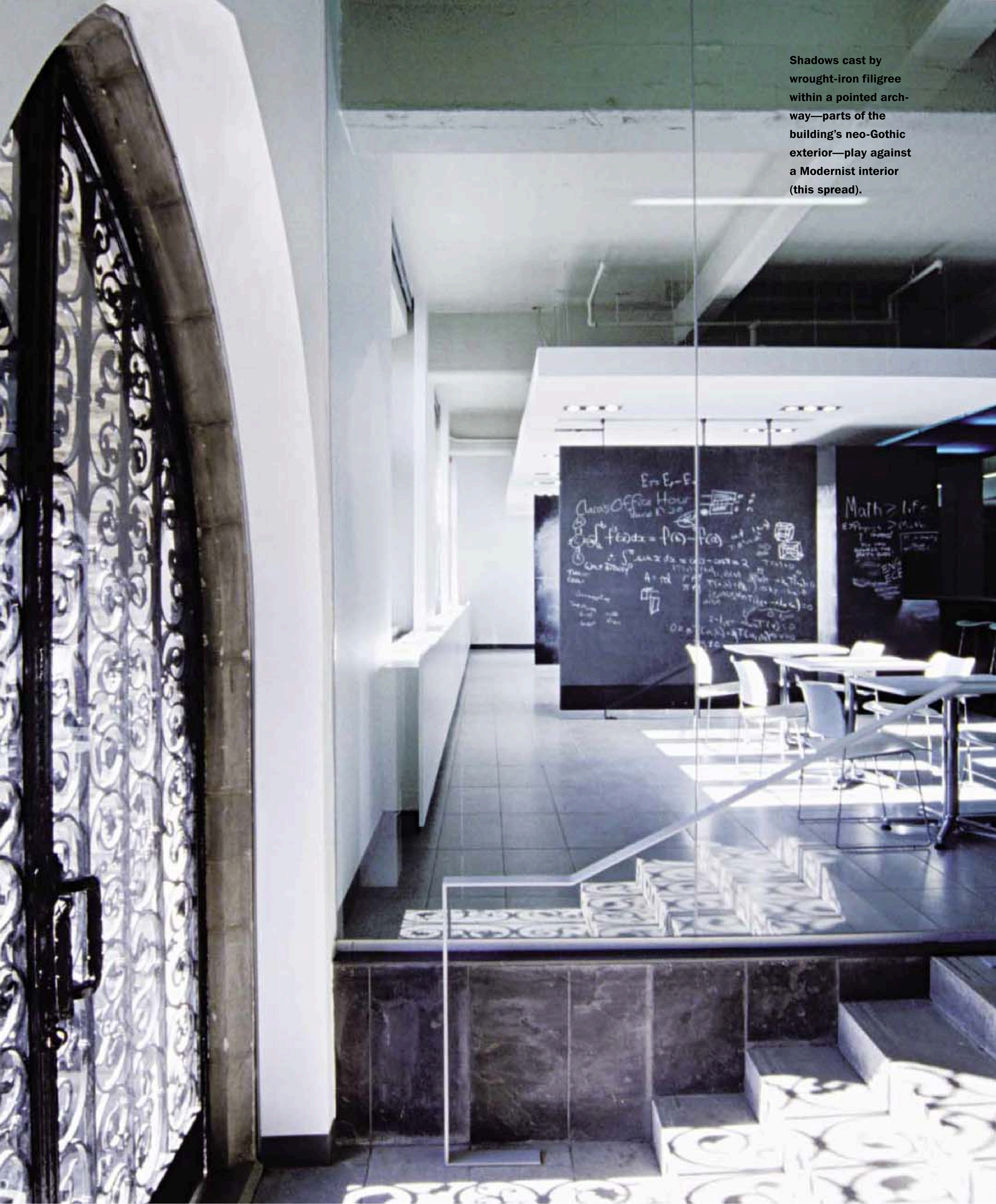
Faucets: *KFA*

Ceramic tiles: *Opoczn*

For more information on this project, go to Projects at **www.architecturalrecord.com**.

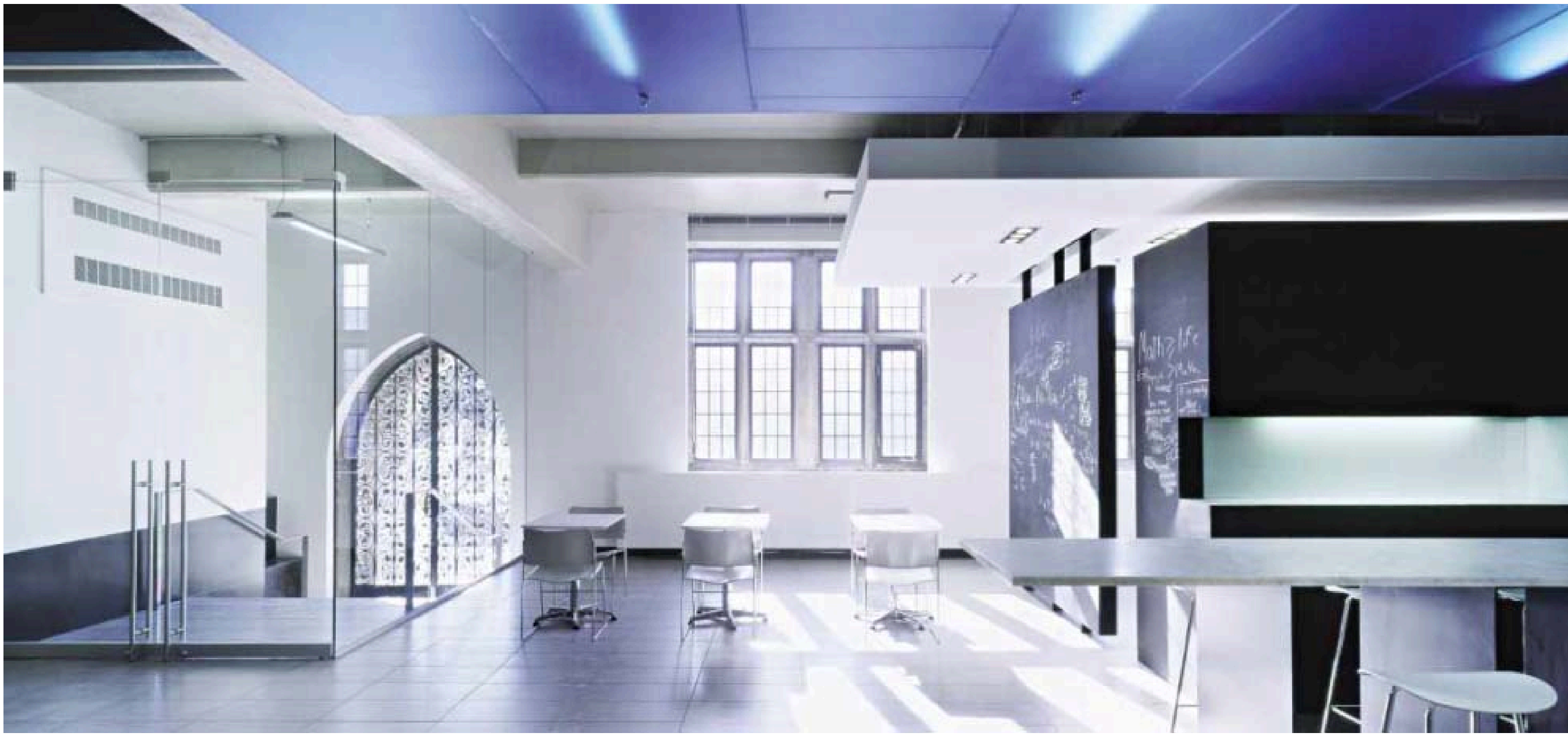


Electrical dials (this page), collected from around the factory, harken back to the facility's gritty past and create the bar's inventive backdrop.


Office Hour
Math > life

Shadows cast by wrought-iron filigree within a pointed archway—parts of the building's neo-Gothic exterior—play against a Modernist interior (this spread).

At the **JAMES STEWART CENTRE** in Ontario, a neo-Gothic exterior provides a ready foil to **KPMB's** abstract and luminously Modernist interior



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By Barbara Dixon

"Hamilton Hall was essentially a Modern concrete building dressed in Collegiate Gothic clothing," says architect Bruce Kuwabara of the 1929 edifice at McMaster University in Hamilton, Ontario. "Our [interior] renovation aggressively stripped away layers of building fabric to reveal the deep structure and the truth of its construction." Undressing the place ultimately laid bare a Modernist concrete frame. But the complete transformation of Hamilton Hall from a science-building-turned-student-center into the award-winning James Stewart Centre for Mathematics took the architectural equivalent of a mathematical equation.

The main challenge for Kuwabara's firm, Toronto-based Kuwabara Payne McKenna Blumberg Architects (KPMB), involved formulating a new vocabulary within the existing historic framework—leaving the dignified neo-Gothic exterior intact while turning dark labyrinths into spaces inspiring team-based, interactive study and research. For all the emphasis on community exchange, it was also important to give professors the option of privacy. KPMB worked with a board of mathematicians to shape this 49,000-square-foot renovation, calling for classrooms, lecture halls, labs, offices, a café, and a student lounge.

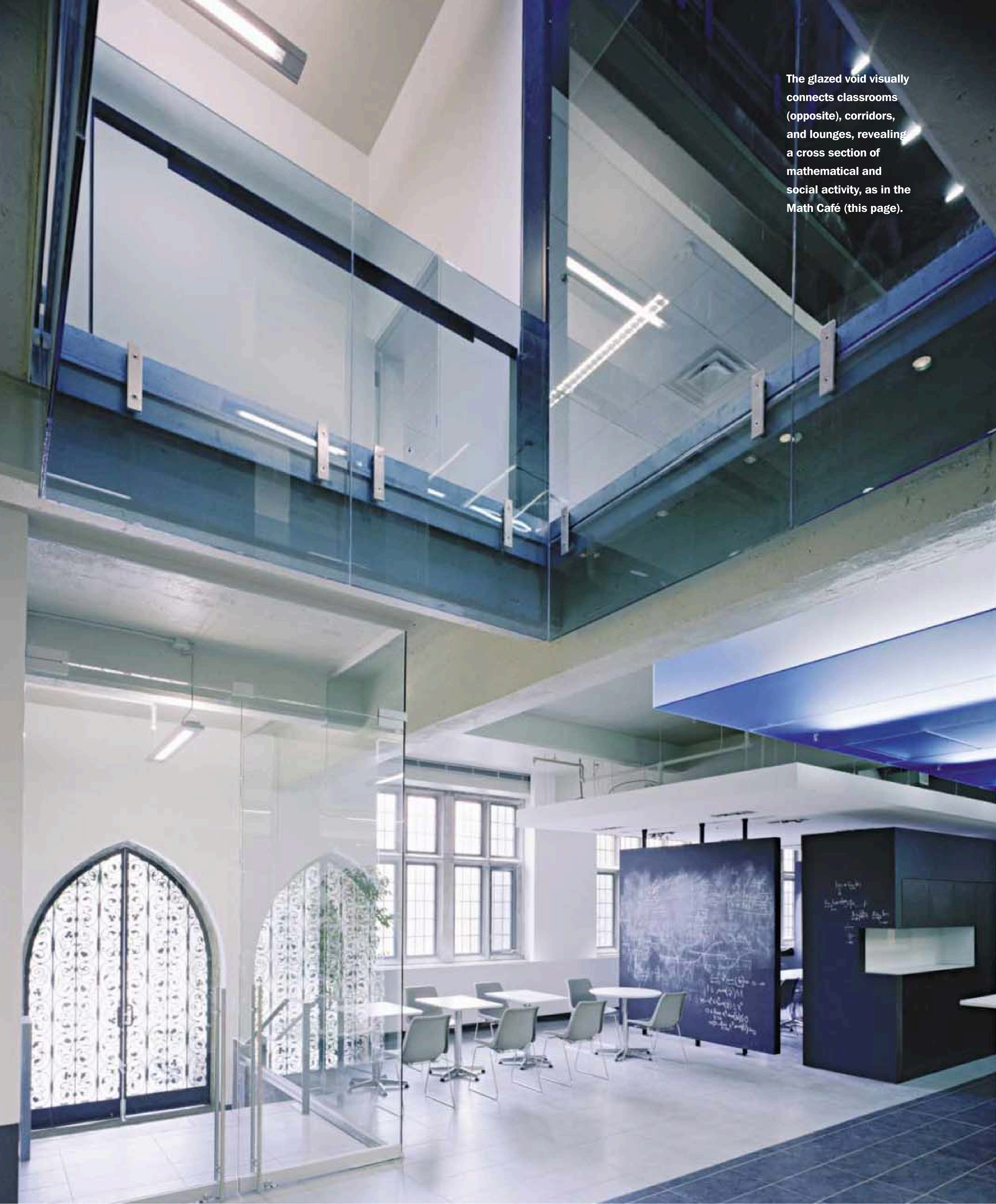
A highly abstract and Modern interior now resides in stark contrast to the Collegiate Gothic exterior. Within the original stone cladding and oriole windows, faculty offices, graduate study areas, and classrooms form a cluster along the perimeter, essentially creating a monastic sanctuary for serious thought. Clerestories between the offices and on the walls along hallways allow light from the large Gothic exterior windows to filter deep into the building. Floor-to-ceiling glass visually connects lecture halls with corridors while retaining closure. The shell-vs.-interior dichotomy works seamlessly, balancing the spatial interplay between inside and out. Old and new complement one another when, for example, shadows of a wrought-iron filigree dance across a planar Modernist composition of luminous, translucent glass panels with matte ceramic tile floors and blackboards.

Slate chalkboards weave through many of the halls and offices,

Barbara Dixon, who often covers design for print and TV, was Elle Décor's *founding editor and* Architectural Digest's *architecture and managing editor.*

Project: *James Stewart Centre for Mathematics, McMaster University, Hamilton, Ontario*

Architect: *Kuwabara Payne McKenna Blumberg—Bruce Kuwabara, design partner; Shirley Blumberg, partner in charge; Luigi LaRocca, senior associate; Kevin Bridgman, project architect; Bruno Weber, Garth Zimmer, Simon Haus, project team*



The glazed void visually connects classrooms (opposite), corridors, and lounges, revealing a cross section of mathematical and social activity, as in the Math Café (this page).

acquiring mathematical scribbles and notations over the course of each day, along with dashes of witty graffiti. Just as the blackboards play functional and aesthetic roles, the corridors serve a dual purpose, operating as both passageways and meeting places (wide enough for tables and benches) that encourage group study, collaborative thinking, and discourse.

Within the existing four-story building, the architects carved out a void—measuring 10 by 69 feet in plan and edged in blue glass—connecting and unifying all four levels vertically and horizontally. An incision in the original fabric, now occupied by light and space, the void functions as tangible surface and volume, embodying the transparency, openness, and multiplicity of purpose that characterizes much of KPMB's work. Skylights crown this well at its east and west ends, further illuminating the interior and contributing to a prismatic effect that often produces indoor rainbows. A cross section of mathematical and social activity now appears from almost any perch in the James Stewart Centre.

Down to the smallest detail, the architects carefully considered how the spaces might be experienced and perceived. Social activity begins on the ground level with a "Math Café" that's readily transformed into classrooms via pivoting chalkboards. Throughout the project, such commonplace elements and materials offer striking yet highly practical design solutions, while keeping to a limited budget.

"The design encourages students, faculty, and visitors to talk mathematics," says Matt Valeriote, chair of mathematics and statistics. "This is the first building at a Canadian university to promote that interaction." Though tactile and animated by light and shadow, this interior is apparently not distracting: Students say it makes them feel alert and invigorated.

KMPB has transformed the building "from a traditionally collegiate structure," as Kuwabara puts it, "into one truly embodying the spirit of collegiality." Openness, ease of performance, and spontaneity are key to the design—and to the human interactions—here. "This is not about perfection," says the architect, "it's about life." ■

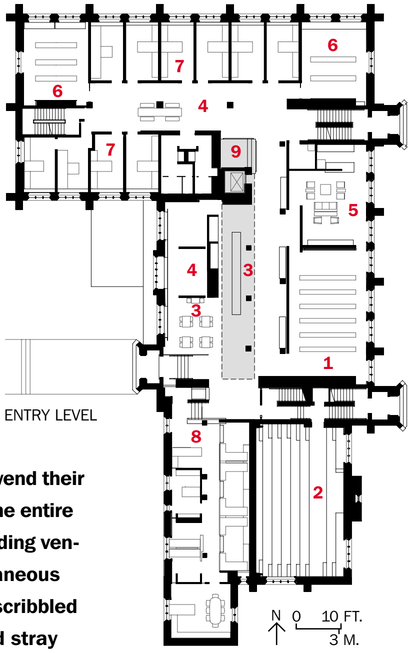
Sources

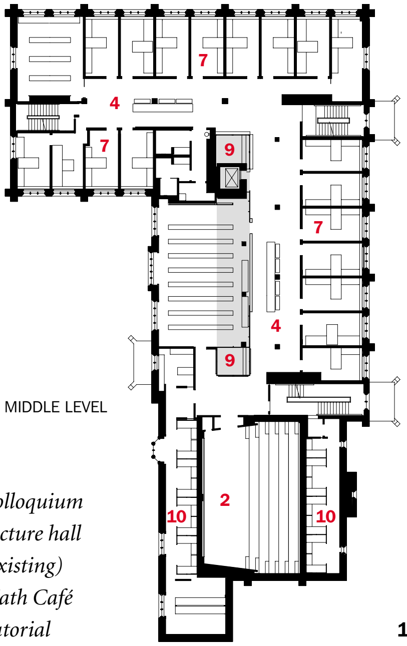
Ceilings: *Armstrong (acoustic); Cyro*

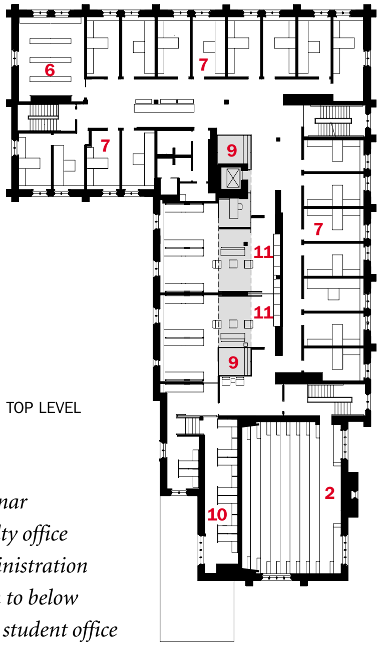
Lighting: *Systemalux*

Floor tile: *Stonetile*

For more information on this project, go to Projects at **www.architecturalrecord.com**.







Blackboards wend their way through the entire building, providing venues for spontaneous calculations, scribbled notations, and stray witticisms (above).

1. *Colloquium*
2. *Lecture hall (existing)*
3. *Math Café*
4. *Tutorial*
5. *Lounge*
6. *Seminar*
7. *Faculty office*
8. *Administration*
9. *Open to below*
10. *Grad student office*
11. *Math lab*

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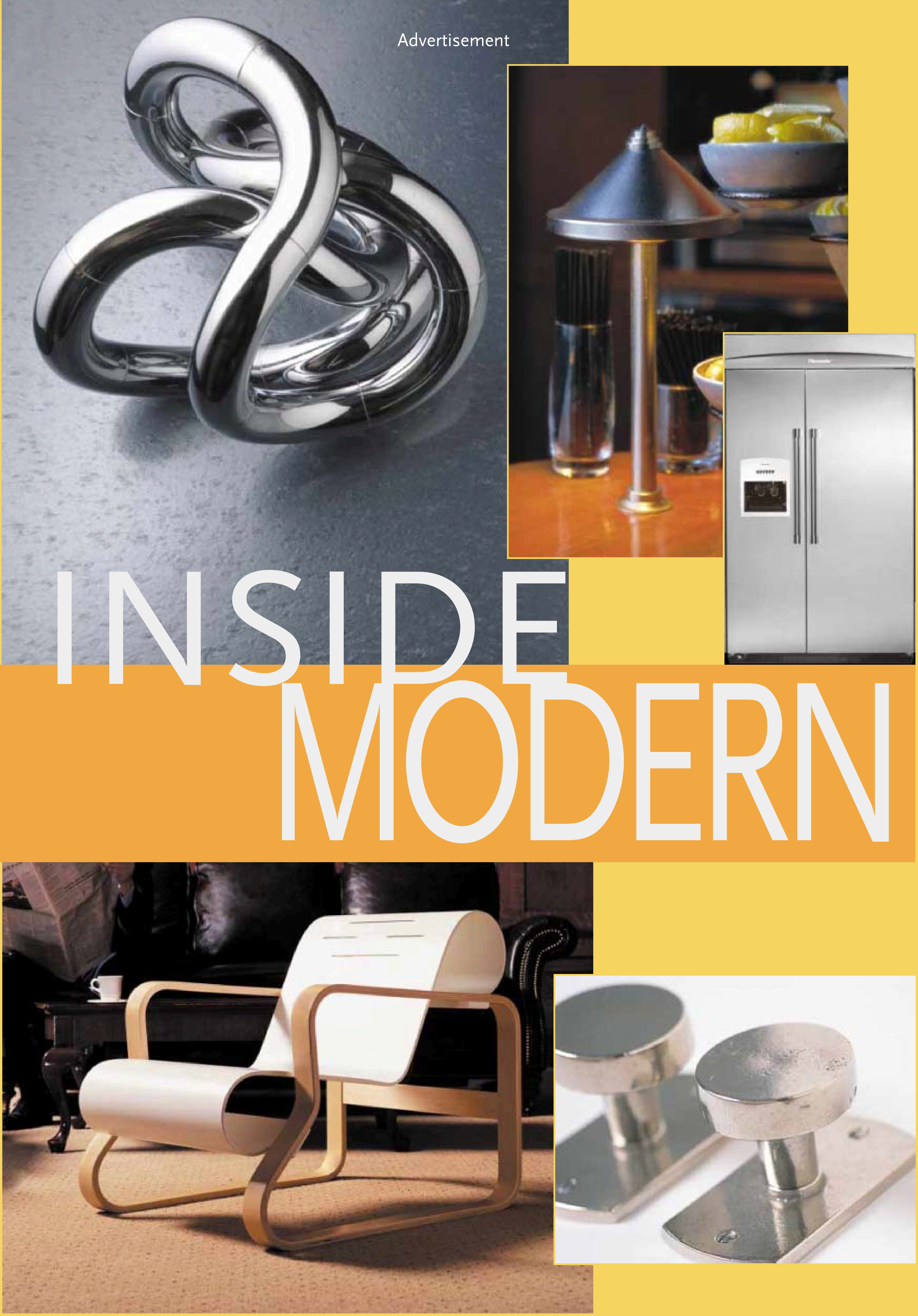

INSIDE MODERN

HERMAN MILLER

...for the Home

The great modern classics never go out of style: Charles and Ray Eames' sensuous molded plywood chairs, George Nelson's whimsical marshmallow sofa, Isamu Noguchi's sculptural wood and glass coffee table. Herman Miller® pioneered these great designs and more, and many have been in continuous production for over fifty years. And design professionals have never stopped specifying them for both residential and commercial projects, even as interior design styles evolved.

Eames® Lounge Chair and Ottoman
Charles and Ray Eames, 1956

Ten years ago, in response to an upsurge of interest in mid-century design – and entreaties from fans of their discontinued products – the company founded Herman Miller for the Home® to reissue favorite designs and make its entire classic furniture line available for the first time to the general public through retail stores.

Goetz™ Sofa
Mark Goetz, 2000

Not one to rest on its laurels, however, Herman Miller has updated its classic products with an exciting palette of new upholstery fabrics and leathers – from hundreds of bright, bold colors to kinetic patterns. The company has always maintained that design must seek the best solution to changing conditions, and its spirit of innovation extends to investment in new designs, like the much-coveted Aeron® chair, that superbly recognizes the needs of the human body at a desk, and the Goetz™ sofa, with a molded plywood shell and deep cushions, that fulfilled its design brief's challenge tocomplement Herman Miller's mid-century products. And in 2002, the company's offerings were enhanced when Finnish manufacturer Artek chose Herman Miller as the sole U.S. distributor for its legendary Alvar Aalto designs of the '30s and '40s, like the Armchair 41.

Herman Miller's award-winning designs – an impressive number are part of the permanent collection of New York's Museum of Modern Art – have been recognized not only for their style, but for the outstanding quality of their materials and manufacture. The company is committed to maintaining its reputation in the face of an increase in copies represented as genuine to unsuspecting customers. In 2003, Herman Miller launched its national "Get Real" campaign to educate consumers about the difference between authentic products built to a designer's exact specifications and poorly constructed imitations. To ensure that customers are getting true Herman Miller quality, and to protect the investment of those who own vintage pieces, the company identifies its reissues with a special label.

George Nelson once said that the single common element in all man-made things is that they are designed. He might have said that those that are well-designed stand apart. The beauty, quality and enduring style of Herman Miller's classic products keep them perpetually in demand and Herman Miller for the Home aims to keep them accessible. For more information, please visit www.hermanmiller.com or call 800-646-4400.

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Aalto Armchair 41
Alvar Aalto, 1932

ROCKY MOUNTAIN HARDWARE

Rocky Mountain Hardware believes minimalism, an integral constituent of modern architecture, should be carried through each element in the overall design of a project. "Our bronze hardware stands up to that scrutiny, both through its rich texture and design. In fact, fine hardware is functional art," says Christian Nickum, CEO of the Hailey, Idaho firm. "Hardware should complement design. We have found more and more that architects are choosing hardware in the initial planning stages in order to carry their idea throughout the project,"

Tempo towel ring shown with the Stepped Escutcheon in white bronze, light patina (TR8 w/E300)

The art-grade bronze ingots are immersed in temperatures of up to 2,200 degrees Fahrenheit, before the molten bronze is hand-poured from the crucible into the mold. The resulting raw castings proceed to highly skilled craftsmen for detailed finishing.

Many architects choose to couple a Rocky Mountain Hardware clean-lined escutcheon with a sleek, modern lever. This combination not only complements the minimalist style, but blends into the structure's artistry.

"Rocky Mountain Hardware lets the intrinsic beauty of bronze speak for itself," Nickum says "Modernism is about function and form, and we pay great attention to both."

The transformation from an imagined concept to the finished hardware begins with quality materials. Rocky Mountain Hardware uses only art-grade bronze to achieve their unique designs. Silicon bronze is an alloy of copper, silicon and zinc, which produces a copper-gold color. White bronze is an alloy of copper, manganese, nickel and zinc, which creates a nickel appearance.

Trained in traditional hand-crafting techniques, Rocky Mountain hardware artisans juxtapose time-honored methods with sophisticated modern technology. The blend of tradition and cutting edge manufacturing processes produces precisely engineered hardware guaranteed to function perfectly.

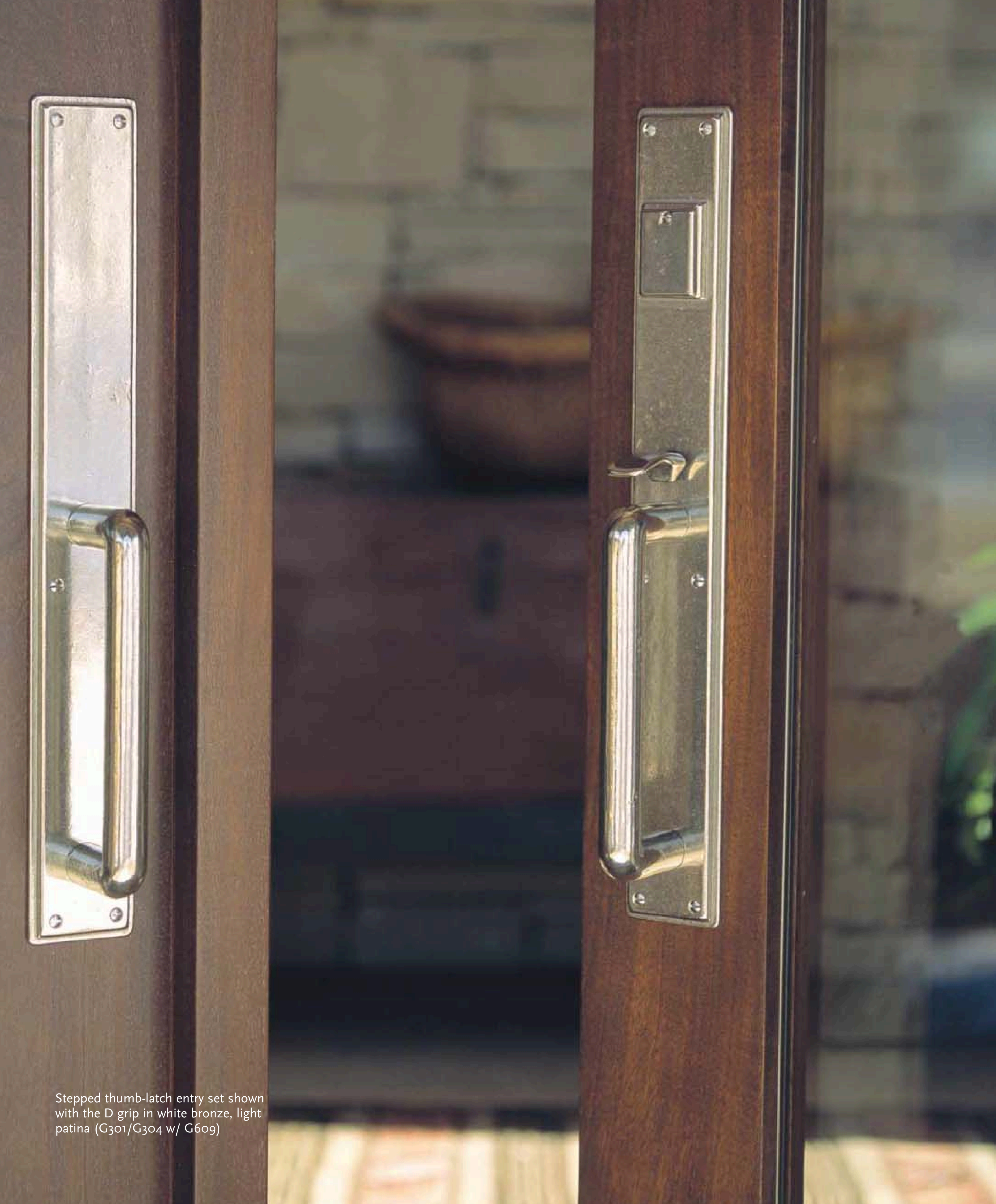
Rocky Mountain Hardware's dedication to quality extends beyond their craftsmanship to include commitment to client partnerships. This collaboration allows architects the flexibility to choose from the main product line or breathe life into an idea.

"Bring us your idea scratched on lunch napkins or, if you prefer, bring in a full-scale model," Nickum says. "We can echo a special detail in your architecture; duplicate your company logo, or a favorite personal icon. We will transform your concept into reality."

Rocky Mountain Hardware's extensive line allows for seamless continuity from the front entry to the back door. With a broad selection of door, cabinet and window hardware, hinges, door accessories, sinks, faucets, kitchen and bath accessories, creating a unified theme is effortless. Each product is available in either white or silicon bronze and seven patina finishes to complement modern and contemporary layouts.

Rocky Mountain Hardware's state-of-the-art technology fuses with classic craftsmanship to create a modern air with the flare of eternal elegance.

Call 888.552.9497 for more information. Or visit us online at www.rockymountainhardware.com.

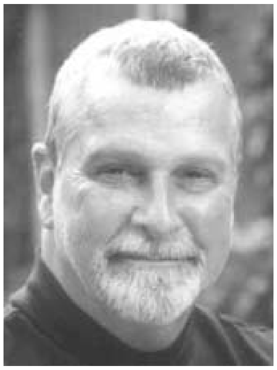


Stepped thumb-latch entry set shown with the D grip in white bronze, light patina (G301/G304 w/ G609)

TEKA

Luminaires built to last, designed for precision lighting, engineered for efficiency.

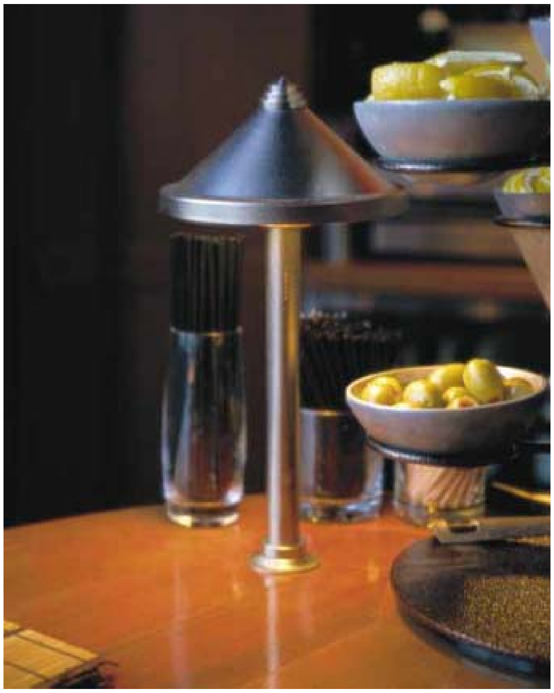
That's the calling card of TEKA Illumination, a Templeton, Calif.-based manufacturer of solid spun copper, sand cast bronze, machined brass and stainless steel lighting fixtures for fine homes and commercial applications.



All TEKA products are U.L. and C.U.L. listed for wet locations, and TEKA offers quality roadway and area luminaires utilizing metal halide, high-pressure sodium, fluorescent and incandescent light sources. TEKA luminaires, built of superior materials and fine craftsmanship, endure climatic hardship with grace and longevity.

TEKA uses materials that date to the Bronze Age and which continue to be used on ocean vessels for their longevity and stability.

Copper, like silver and gold, is resistant to oxidation. Adding small amounts of other materials to molten copper changes it to alloys of bronze or brass, hardening it and making it more suitable for casting and machining. Solid copper is used in spun metal parts for TEKA where formability is an advantage; bronze for more rigid, complex cast structural shapes and brass, where high tensile strength is necessary in machined and threaded parts. Stainless steel is the ultimate material when strength in a narrow section is required. There is no stronger corrosion-resistant metal available. All of TEKA's fasteners are 18-8 Stainless steel.



Tabletop fixture, AZIE bar, designed by David Malman of Architectural Lighting Design, San Francisco

TEKA's glass lenses and diffusers are always tempered and TEKA employs no painted or clear-coated finishes. The materials in TEKA designs develop their patina, a naturally occurring oxide coating. A number of different surface treatments are standard, however.

Its "natural" surface is a result of etching metals to enable differing surfaces to oxidate evenly. Their appearance will vary according to climate: in a moist, marine environment copper-based materials will turn green quickly. Luminaires of the same material in the desert will develop a deep, almost reddish brown coloring.

TEKA's "statuary bronze patina" is factory-applied oxiding agents, followed by a light wax to accelerate what occurs naturally to metals in nature. "This is a good way to go for installations where a uniform look is desired initially, or for interior areas with limited exposure to the elements," says company spokesperson Kim Routh.

"There is always a market for 'upscale goods of the best design and quality..."
Larry Routh

Copper, brass and bronze all take on a similar rich, dark-penny look and will be differentiated from one another only upon close observation.

Nickel plating results in a rich, semi-matte finish similar to pewter. TEKA's nickel-plated luminaires start out with a deep mechanical and chemical etch to provide the plating a firm bond to the metal. Users can expect nickel-plated luminaires to darken slightly and a green color to show in the corners with exposure to weather.

"We share these details because we think our attention to them results in a better, more reliable fixture," says Routh. "At TEKA, we employ the latest in light sources–metal halides and long-life halogens, for instance–to create luminaires with often simple lines that accentuate the modernist theme and at the same time are highly energy efficient and, more importantly, beautiful." For more information, please visit www.teka-illumination.com or call 805-434-3511.

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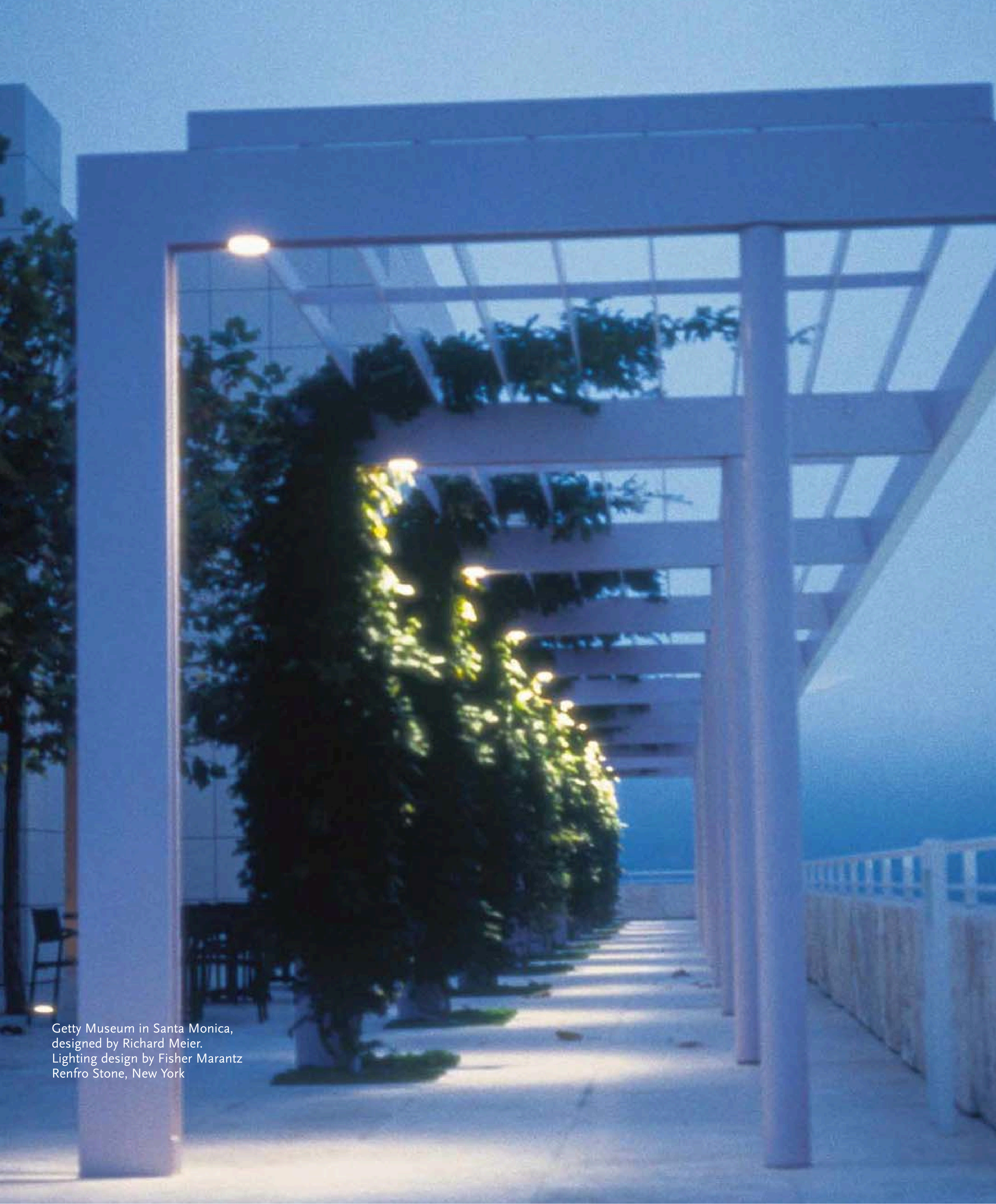

Getty Museum in Santa Monica,
designed by Richard Meier.
Lighting design by Fisher Marantz
Renfro Stone, New York

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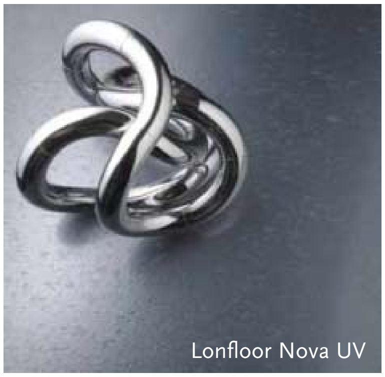
LONSEAL

Lonseal's clean, elegant lines–its bold forms and sophisticated style, its downtown hues, its fashionable feel –have always been reminiscent of the best of Modernism.

Founded in the U.S. in 1972 as a subsidiary of the Japanese parent company, Lonseal dove into the high-stakes world of interior design in the early 1980s, intent on melding its matchless resilience with incomparable style.


Lonfloor Nova UV

Teaming with some of the country's leading designers, Lonseal swiftly unveiled its first high-fashion/low-maintenance embossed and smooth products and launched an award-winning sensation that continues to this day.

Lonseal's environmentally friendly LonEco line of Green products was expanded in 2003 to include LonEco Mesa, an eco-friendly embossed surface made primarily of recycled vinyl and wood powder and emitting ten times less volatile organic compounds than linoleum – a stylish way for architects and designers to bring their specifications under the LEED Green Building Rating System..

Lonseal's commitment to research and development has allowed it to exploit state-of-the-art technology to create strikingly innovative flooring that has become the backdrop for some of the world's most modernistic spaces: Giorgio Borruso's Fornarina store at Las Vegas' Mandalay Place and his glitzy retail space for Miss Sixty at South Coast Plaza, Costa Mesa, both showcased Lonseal's "reptilean" Londile flooring, featuring a stunning metallic tint, dazzling endurance, and a wide array of chameleon-like colors.

In June, at NeoCon World's Trade Fair 2004, Lonseal previewed one of its most exciting 2005 surface innovations, Lonfloor Nova UV. The color-shifting, hologram-like new surface won the Silver Award in the 2004 Best of Neocon competition in the flooring category. Nova UV attracted attention for its light-shifting range of colors and metallic-chip patterning, but sells itself on the basis of a new urethane finish that makes cleanup a breeze and promises to drastically reduce maintenance costs over the life of the product. Lonseal Nova UV is the ultimate blend of smooth-surface practicality and alluring aesthetics.

One of the fastest-growing resilient companies in the industry, the corporate offices and warehouses of Lonseal Inc. are based in Carson, California–where we send out our stunning array of enchanting surface styles all over the country and around the world. For more information, please visit www.lonseal.com or call 800-832-7111.

Londile installation,
Arthur Andersen,
Chicago, IL

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Londile installation,
Menzie International Showroom
Pacific Design Center
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THERMADOR

If cooking is an art, then the Thermador Professional Series kitchen is surely the ideal muse.

"All of our collections speak to the clean design and integration architects look for," says spokesperson Beatriz Sandoval. "We are very cognizant of design influences on architects and specifiers–in fact, our designs are heavily influenced by our interaction with focus groups, whose feedback dictates the appearance of products the market will see five or six years in the future."

The combination of powerful performance and elegant styling make the Thermador Professional® Series the epitome of American luxury in the kitchen. State-of-the-art functionality provide advance surface cooking burner systems offer new features for exceptional performance; the largest oven cavity in its class and advanced third element convection.

The contemporary residential kitchen, Sandoval says, has taken on the "big, bold, powerful" look–and all the practicality–of the commercial kitchen.

The trend is an outgrowth of a Food Network-inspired revival of the culinary arts and a post-9/11 tendency to entertain at home instead of going out. "More and more people are spending more time at home," Sandoval says, "and the kitchen is the most popular place to congregate."

As a result, she says, kitchen appliances have become entertainment centers, if you will, and "style" is just as important in the kitchen as in the rest of the home. The contemporary kitchen needs to be comfortable. It needs to "feel good."

Integration, Sandoval says, is critical, and functionality is as important as form. "We have a strong history of functionality, and we cultivate that. Thermador is the perfect marriage of classic American style."

The successful contemporary kitchen is based on performance that inspires confidence and style that delights the eye. Thermador's Professional Series is the ultimate expression of personal style, good taste and the appreciation of the complete culinary experience, from cooking and ventilation to refrigeration and dish care. It creates an environment that embodies the essence of American luxury–a respect for excellence in craftsmanship and a true appreciation for fine living.

For more than 70 years, Thermador has elevated the culinary craft with original state-of-the-art kitchen appliances that exceed even the most demanding expectations. An unwavering commitment to superior performance and elegant design is evident in every Thermador product: the exceptional Professional Series, the quietest refrigerators on the market, advanced wall ovens and an extensive collection of cooktops, hoods and downdraft systems that have made Thermador an American icon.

Designers can choose bottom mount, side-by-side or built-in refrigerators to match Professional Series ovens and cooktops for a modernistic, professional kitchen look. They can also match Thermador's Designer Series, which features a stainless steel front, or the Custom Panel Series, designed to perfectly match nearly any kitchen cabinetry.

A re-engineered star-shaped burner, a feature of the Professional Series, provides unsurpassed flame spread, faster time-to-boil and rapid recovery time. A patented ExtraLow burner gives you the broadest possible range of low temperature settings for maximum control, over even the most delicate sauces. A 375 BTU ExtraLow flame cycles on and off with precise timing, achieving true simmer. The Professional Series grill surface offers outdoor performance and indoor convenience, an 18,000 BTU flame and an easier-to-use ignition system. Thermador's iconic dashboard-style temperature indicator provides precise temperature readings at a glance. For more information please visit www.thermador.com or call 800-656-9226.

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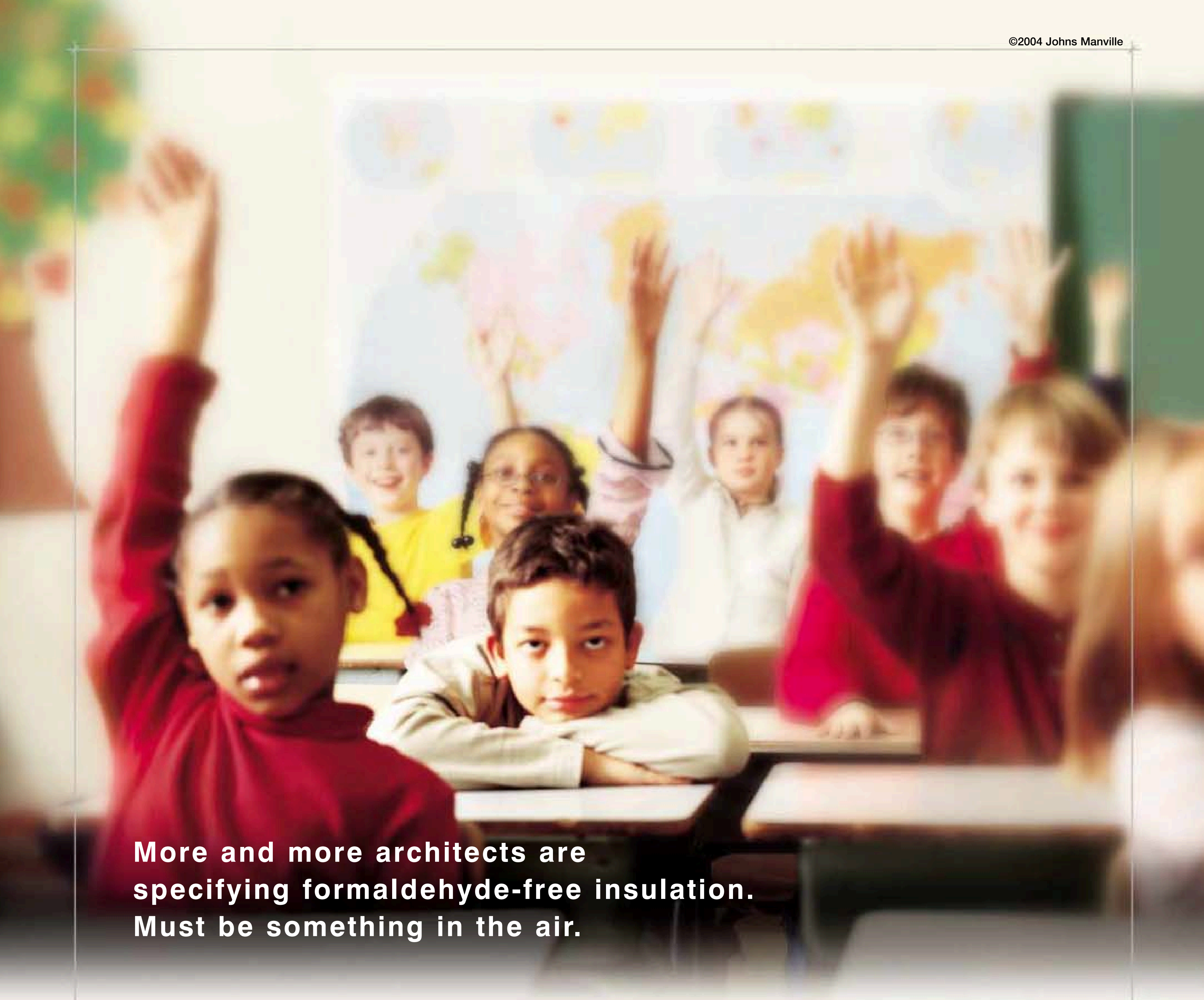

More and more architects are specifying formaldehyde-free insulation. Must be something in the air.

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Architectural Technology

How to keep building moisture from becoming a mold problem … and why 3D CAD hasn't hit its stride yet

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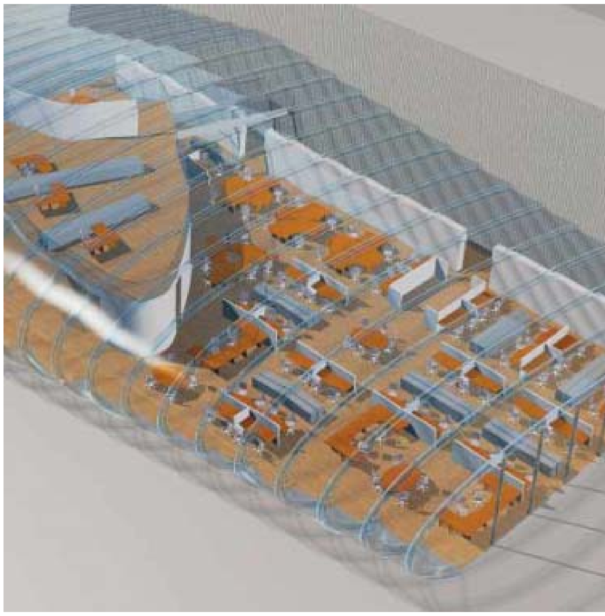
Moisture control is the key step in halting mold growth in buildings (171).

Graduate students will study innovative design and production tools (187).

In the mid-19th century, many public-health officials believed that deadly diseases like cholera and tuberculosis, which struck the poor in greater numbers than the wealthy, were caused by an invisible miasma that hovered over the slums like a fog, infecting everyone under its blanket. Their thesis proved false, but that didn't mean that living in the slums was healthy. The same goes for mold in buildings. While scientific evidence linking the presence of mold to serious illnesses is mixed, it's still a nuisance that may not only lead to health problems for occupants, but also causes foul odors and destroys carpets, wall coverings, and other interior materials. This month's continuing education story probes the issue of mold growth in buildings. Once again, the benefits of architect-engineer collaboration are clear: Because today's construction materials and techniques seal off buildings from the outdoors more than traditional ones, modern structures are simply more likely to trap moisture—which makes it imperative for architects and mechanical engineers to work together to understand how air will move around within a building, to seal off openings as cleanly as possible, and to size HVAC systems appropriately.

This month we also feature a piece by Ken Sanders, FAIA, on the state of building information modeling (BIM) within design practice. Sanders, author of *The Digital Architect*, has watched the metamorphosis of this long-proposed practice method for years—and offers his thoughts on why the technology hasn't been as widely embraced as software vendors or consultants expected.

Recently, RECORD's technology editors learned that the founding of a new interdisciplinary graduate program at the Stevens Institute of Technology (page 187) was inspired in part by our October 2003 *Innovations* issue. We're glad to have encouraged a new line of thinking in design education. And we've been pecking away at our next *Innovations* issue; look for it in November.
Deborah Snoonian, P.E.



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Mold May Not Be a Severe Health Menace, but It Is Still a Complex Problem

ARCHITECTS MUST UNDERSTAND AIR, HEAT, AND MOISTURE FLOW TO ACHIEVE BETTER AIR QUALITY

By Nancy B. Solomon, AIA

The images are haunting: greenish-black fuzz advancing across ceilings and pink splotches blooming on vinyl wall coverings. Hotels close for months at a time to remove unsightly and destructive invasions, juries award hundreds of thousands of dollars to plaintiffs who believe toxins from such growth have seriously compromised their health, and property insurers have begun inserting language into owners' policies to spell out what, if any, mold damage they cover. Has mold become the asbestos of our generation?

In the sense that it has the power to generate insurance claims, fuel lawsuits, and whip up general hysteria, perhaps yes. According to Robert P. Hartwig, senior vice president of the Insurance Information Institute in New York, "U.S. insurers paid out at least $3 billion in mold-related claims in 2002, more than double the $1.3 billion paid the previous year." Although no building type is immune from mold, single and multi-unit residential structures, hotels, and schools seem to be of greatest concern.

According to Gita Dev, FAIA, an architect in San Francisco and chair of the AIA Housing Committee, members of the industry have become increasingly worried about mold, because its presence in a building could potentially make them liable for health-related problems. "That type of exposure is almost unlimited in dollars," says Dev, "as opposed to construction defects, for which you can figure out how much it will cost to fix."

Yet Victor O. Schinnerer & Company, the Chevy Chase, Maryland–based firm that underwrites professional liability insurance for architects and engineers nationwide, hasn't seen an explosion of mold-related claims directed at these design professionals. Vice President Lorna Parsons reports that "over time, 3 percent of our claims have involved water intrusion, which is where you get mold from, and they are still running the same to date. So mold is not handicapping the A&E profession as it goes about getting insurance and pursuing business."

Contractors, on the other hand, have been hit hard. As a result, since about 2002, a growing number of companies that provide comprehensive general liability insurance to contractors have begun to exclude mold coverage from new policies. Frank Musica, assistant vice president at Schinnerer, says that architects may one day feel the effects of this recent change. But he also thinks that the industry's growing sensitivity to the issue has introduced better procedures and products that will temper the severity of such a situation.

Nancy B. Solomon, AIA, writes frequently about building science and architectural technology and innovation.

CONTINUING EDUCATION

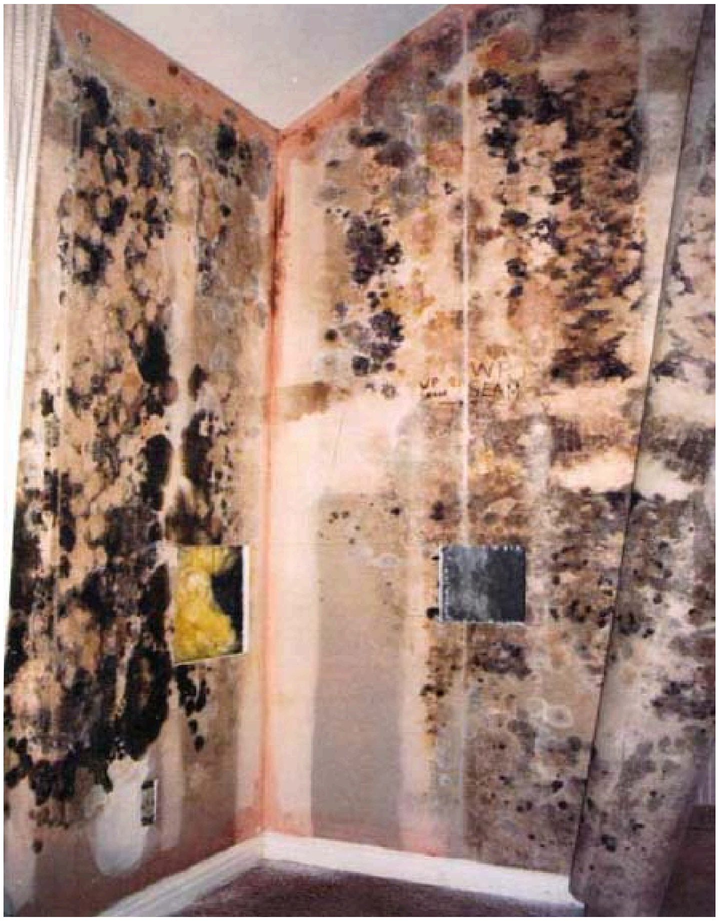
Use the following learning objectives to focus your study while reading this month's ARCHITECTURAL RECORD/ AIA Continuing Education article. To receive credit, turn to page 178 and follow the instructions. Other opportunities to receive Continuing Education credits in this issue include the following sponsored sections: "Green Product Evaluation Necessitates Making Trade-offs," sponsored by USG, page 197, and "Bright Ideas—Office Lighting 101," sponsored by Humanscale, page 192.

LEARNING OBJECTIVES

After reading this article, you should be able to:

1. *Describe problems associated with moisture in buildings.*
2. *Explain how mold spreads and grows in buildings.*
3. *Evaluate proper placement of moisture-inhibiting materials in buildings.*

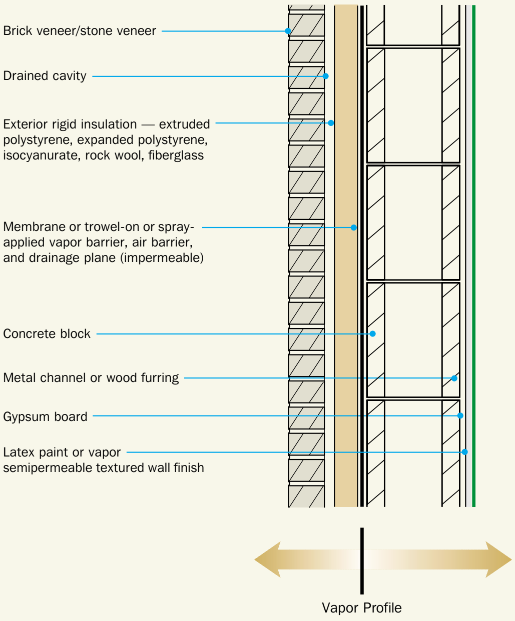
For this story and more continuing education, as well as links to sources, white papers, and products, go to ***www.architecturalrecord.com***.

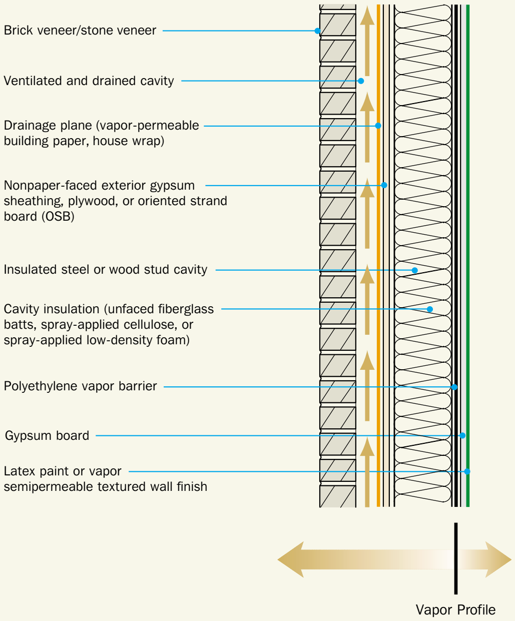


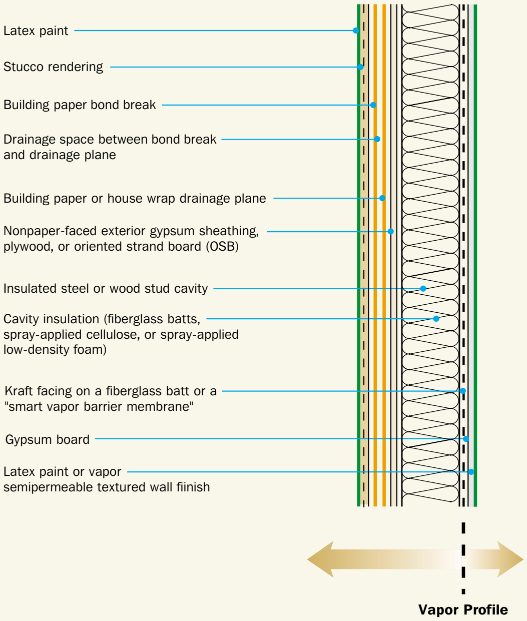
Mold flourishes on wallboard behind impermeable vinyl wall covering in a Florida hotel. Condensation forms when moist warm air from outdoors meets cooler spaces indoors. The vinyl traps the water, which is key to mold growth.

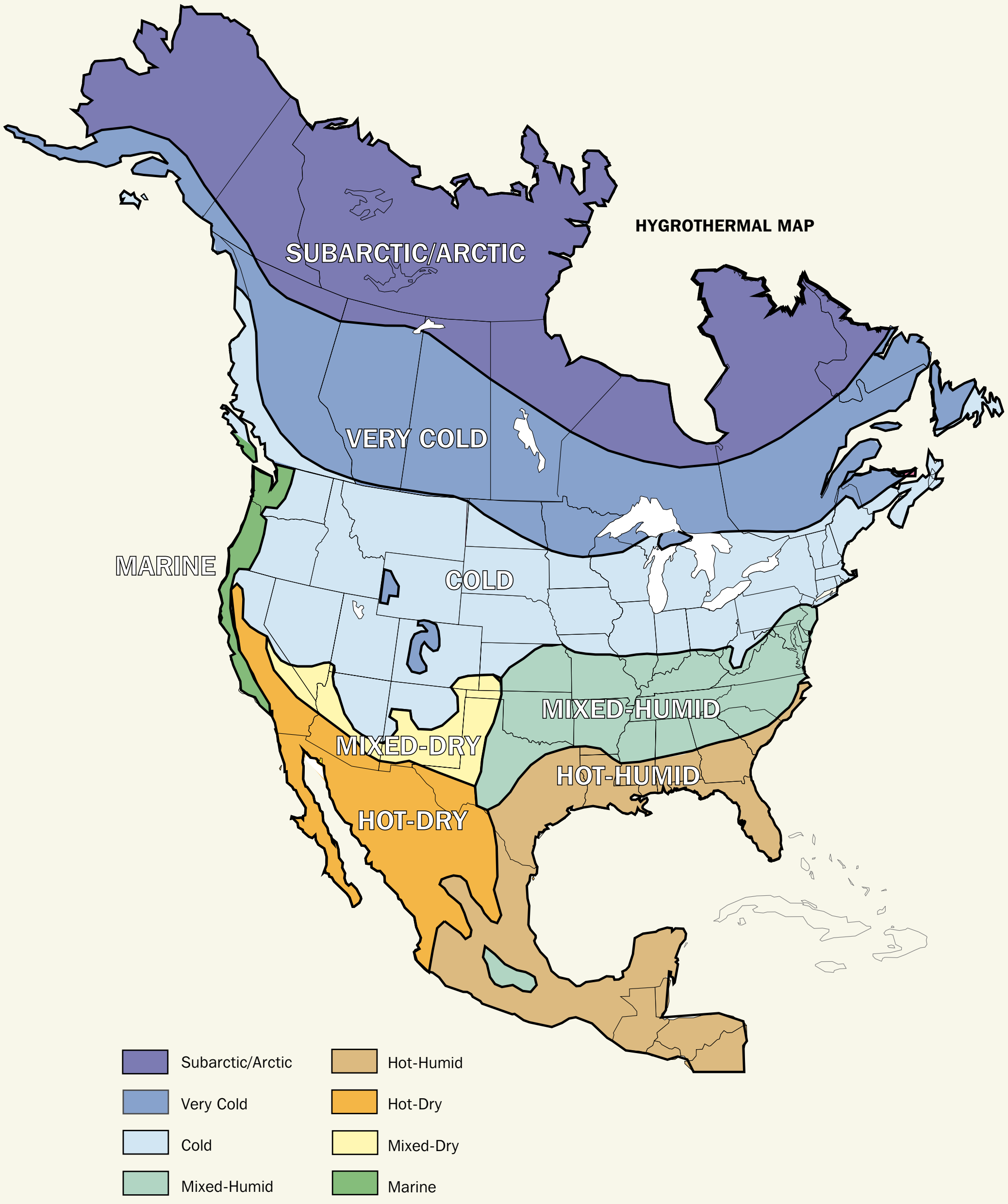
PHOTOGRAPHY: COURTESY DAVE ODOM/CH2M HILL

To avoid moisture buildup, architects must consider a wall's vapor profile for a given climate. Lstiburek has proposed 16 potential assemblies, three of which are illustrated on the left: The top example can work in all regions indicated on the hygrothermal map (below); in the center is one appropriate for very cold and subarctic/arctic regions; the one at bottom is suited to cold and very cold regions. The walls have been designed to dry out to one side or the other.


Brick veneer/stone veneer
Drained cavity
Exterior rigid insulation — extruded polystyrene, expanded polystyrene, isocyanurate, rock wool, fiberglass
Membrane or trowel-on or spray-applied vapor barrier, air barrier, and drainage plane (impermeable)
Concrete block
Metal channel or wood furring
Gypsum board
Latex paint or vapor semipermeable textured wall finish
Vapor Profile


Brick veneer/stone veneer
Ventilated and drained cavity
Drainage plane (vapor-permeable building paper, house wrap)
Nonpaper-faced exterior gypsum sheathing, plywood, or oriented strand board (OSB)
Insulated steel or wood stud cavity
Cavity insulation (unfaced fiberglass batts, spray-applied cellulose, or spray-applied low-density foam)
Polyethylene vapor barrier
Gypsum board
Latex paint or vapor semipermeable textured wall finish
Vapor Profile


Latex paint
Stucco rendering
Building paper bond break
Drainage space between bond break and drainage plane
Building paper or house wrap drainage plane
Nonpaper-faced exterior gypsum sheathing, plywood, or oriented strand board (OSB)
Insulated steel or wood stud cavity
Cavity insulation (fiberglass batts, spray-applied cellulose, or spray-applied low-density foam)
Kraft facing on a fiberglass batt or a "smart vapor barrier membrane"
Gypsum board
Latex paint or vapor semipermeable textured wall fiinish
Vapor Profile


HYGROTHERMAL MAP
SUBARCTIC/ARCTIC
VERY COLD
COLD
MARINE
MIXED-HUMID
MIXED-DRY
HOT-HUMID
HOT-DRY
Subarctic/Arctic
Very Cold
Cold
Mixed-Humid
Hot-Humid
Hot-Dry
Mixed-Dry
Marine

Also, it's still not clear that mold is the perilous medical threat sometimes portrayed on the evening news and in courtrooms. According to *Damp Indoor Spaces and Health*, a report released in May by the Institute of Medicine of the National Academies in Washington, D.C., current research suggests that indoor mold can be linked to coughing, wheezing, and upper respiratory tract symptoms in otherwise healthy people; to asthma symptoms in sensitized people; and hypersensitivity pneumonitis (a relatively rare immune-mediated condition) in susceptible people. The committee that authored the report goes on to state that, at the time they reviewed the existing scientific literature, research had not yet established a clear relationship between indoor dampness in general—or indoor mold in particular—and the most severe health conditions that some have attributed to mold (see sidebars, right).

The committee is careful to state that it found neither "sufficient evidence for a causal relationship" nor "limited or suggestive evidence of no association for the various illnesses considered." In other words, more comprehensive studies must be undertaken to make a final determination one way or the other. The authors also stress that the "conclusions are not applicable to persons with compromised immune systems, who are at risk for fungal colonization and opportunistic infections."

Although the jury is still out as to the degree to which mold causes health problems in otherwise healthy people, the committee stated that excessive indoor dampness—which is conducive not just to mold but also to bacteria, dust mites, cockroaches, and other larger organisms, and to chemical and particle emissions from building materials (all of which may have medical repercussions)—does pose a risk to public health. The authors emphasize the importance of educating building professionals on the causes and prevention of moisture problems.

THE BUILDING INDUSTRY'S ONLY VIABLE DEFENSE AGAINST MOLD IS MOISTURE CONTROL.

So while there may be some relief to building professionals that, at least for now, there may not be sufficient evidence to prove beyond a shadow of a doubt that mold causes fatigue, cancer, or several other extremely serious maladies, mold growth must still be inhibited for the general health of occupants; to avoid the unpleasant conditions associated with it, such as odors and staining; and to maintain the structural integrity of furnishings and building materials.

Biology 101

To prevent mold, architects should first understand something about the creature. Molds are a type of fungus. Fungi occupy two kingdoms of the seven cited in the current classification system of biological organisms. Unlike organisms in the animal kingdom, which digest food internally, fungi secrete enzymes into the environment to break down material into smaller components that they can then absorb. This process serves the extremely important role of cleansing and recycling elements in nature.

The fuzzy-looking part of mold is called the mycelium, which is made up of many slender cells called hyphae. Digestion occurs at the ends of the hyphae. As the mold grows, the hyphae must continue to multiply and reach further out to gather more nutrients to satisfy the ever-larger organism. Different types of molds digest different types of foods. Unfortunately for the building industry, many molds like the cellulose in wood products; through this process, they can discolor and ultimately destroy the host material.

Molds reproduce through spores, which fly through the air with the greatest of ease. If conditions at landing are right, the spores will ger-

Summary of Findings Regarding Association Between Health Outcomes and Exposure to Damp Indoor Environments

Sufficient Evidence of an Association
- Upper respiratory (nasal and throat) tract symptoms
- Cough
- Wheeze
- Asthma symptoms in sensitized persons

Limited or Suggestive Evidence of an Association
- Dyspnea (shortness of breath)
- Lower respiratory illness in otherwise healthy children
- Asthma development

Inadequate or Insufficient Evidence to Determine Whether an Association Exists
- Airflow obstruction (in otherwise healthy persons)
- Mucous membrane irritation syndrome
- Chronic obstructive pulmonary disease
- Inhalation fevers (nonoccupational exposures)
- Lower respiratory illness in otherwise healthy adults
- Acute idiopathic pulmonary hemorrhage in infants
- Skin symptoms
- Gastrointestinal tract problems
- Fatigue
- Neuropsychiatric symptoms
- Cancer
- Reproductive effects
- Rheumatologic and other immune diseases

Summary of Findings Regarding Association Between Health Outcomes and Presence of Mold or Other Agents in Damp Indoor Environments

Sufficient Evidence of an Association
- Upper respiratory (nasal and throat) tract symptoms
- Cough
- Hypersensitivity pneumonitis in susceptible persons
- Wheeze
- Asthma symptoms in sensitized persons

Limited or Suggestive Evidence of an Association
- Lower respiratory illness in otherwise healthy children

Inadequate or Insufficient Evidence to Determine Whether an Association Exists
- Dyspnea (shortness of breath)
- Asthma development
- Airflow obstruction (in otherwise healthy persons)
- Mucous membrane irritation syndrome
- Chronic obstructive pulmonary disease
- Inhalation fevers (nonoccupational exposures)
- Lower respiratory illness in otherwise healthy adults
- Acute idiopathic pulmonary hemorrhage in infants
- Skin symptoms
- Gastrointestinal tract problems
- Fatigue
- Neuropsychiatric symptoms
- Cancer
- Reproductive effects
- Rheumatologic and other immune diseases

Source: Institute of Medicine's *Damp Indoor Spaces and Health*

DRAWINGS: COURTESY JOSEPH LSTIBUREK/BUILDING SCIENCE CORPORATION (OPPOSITE)

minate and fungal growth will begin. Molds release microbial volatile organic compounds, which cause the musty smell, and produce allergens and, under certain conditions, toxins. The allergens and toxins are not airborne themselves but can be carried in flight with the spores. It is these allergens and toxins that are the potential medical culprits.

Spores, which are microscopic, are found virtually everywhere. There is no cost-effective way of removing them from all buildings. To germinate, they need oxygen, food, an acceptable temperature, and sufficient water. The typical indoor environment provides all these factors except possibly one: Mold requires a higher quantity of moisture (in the order of 70 percent relative humidity or higher) than is comfortable to humans (20 to 60 percent relative humidity). So, the building industry's only viable defense against mold is moisture control.

Water, water everywhere

Buildings get wet: Some building materials are made with water; others are rained on during construction. Roofs and windows leak. Pipes break. And moisture-laden air finds the path of least resistance. Despite such realities, too many architects and builders design and construct as if water will never enter the building.

This was not a problem years ago, when construction systems were more robust. Traditional materials, most of which are vapor permeable, installed according to traditional methods, could easily store a reasonable amount of moisture and allow it to gradually dissipate, as atmospheric or other environmental conditions changed, without damaging the building assembly. But as construction practices evolved over the 20th century, the balance of moisture and materials that we had come to take for granted began to change.

Modern construction systems consist of many materials that are less permeable than traditional materials and so can neither store moisture vapor nor allow it to pass. Forensic engineer Joseph Lstiburek, a principal of Building Science Corporation in Westford, Massachusetts, estimates that, on average, the water-storage capacity of materials in a typical house has decreased from about 500 gallons a century ago to about 5 gallons today. And impermeable materials placed in the wrong location—like the vinyl wallpaper that has only too often been applied on the cooler interior walls of hotel rooms in hot, humid climates—can trap moisture where it doesn't belong.

A wall cavity in a building under construction in the Northeast developed mold because materials were not kept dry prior to installation and water was entering from upper stories as they were being built.

Mold grows under sheet vinyl covering a concrete floor in the Midwest because a vapor barrier had not been placed below the slab during construction, thus allowing ground moisture to penetrate the concrete.

Newer, more processed materials—such as engineered woods and paper-faced gypsum board—offer mold a smorgasbord of more easily digestible food than do the traditional lumber and plaster that they replace. "To mold, plywood is like candy and paper is pablum," says Lstiburek. So the now-wet paper on the gypsum board behind the vinyl wallpaper in that southern hotel room provides a veritable feast for the ever-present mold spores.

And our increased reliance on air-conditioning—even in northern states—means that the temperature gradient at an exterior wall can change dramatically over the year (in northern climates, colder air may be outside in winter but inside in summer), thus altering the dewpoint, or the position at which condensation forms, and the direction of vapor flow. Although it is still true that the vapor retarder, if needed, should go on the warm side of insulation, in some climates it becomes confusing as to which is the warmer side. Properly detailed, an air-conditioned building in Minneapolis is just as likely to have mold in the summer as one in Miami.

"TO MOLD, PLYWOOD IS LIKE CANDY AND PAPER IS PABLUM," SAYS FORENSIC ENGINEER JOSEPH LSTIBUREK.

The scale was finally tipped after the oil crisis of the 1970s. In order to reduce fuel consumption, buildings were being better insulated. Insulation, however, reduces the ability of a wall to dry out. It can also shift the dew point within the wall to a point where, if not adequately drained or vented, mold growth and other water damage can occur.

Around the same time, buildings were being fitted with more sophisticated, energy-efficient glazings, lighting systems, and appliances. These measures succeeded in reducing the heat load in buildings. However, because air-conditioning systems are typically oversized, "the cooling mode does not come on often enough or long enough to allow proper dehumidification," explains Michael Garrison, associate professor

PHOTOGRAPHY: COURTESY ENVIRONMENTAL HEALTH & ENGINEERING

Airing Out the Facts

ABOUT CAVITY WALL DRAINAGE

New research indicates that airflow in masonry cavity walls is equally as important as proper water drainage and can aid in quickly drying out the components within the cavity.

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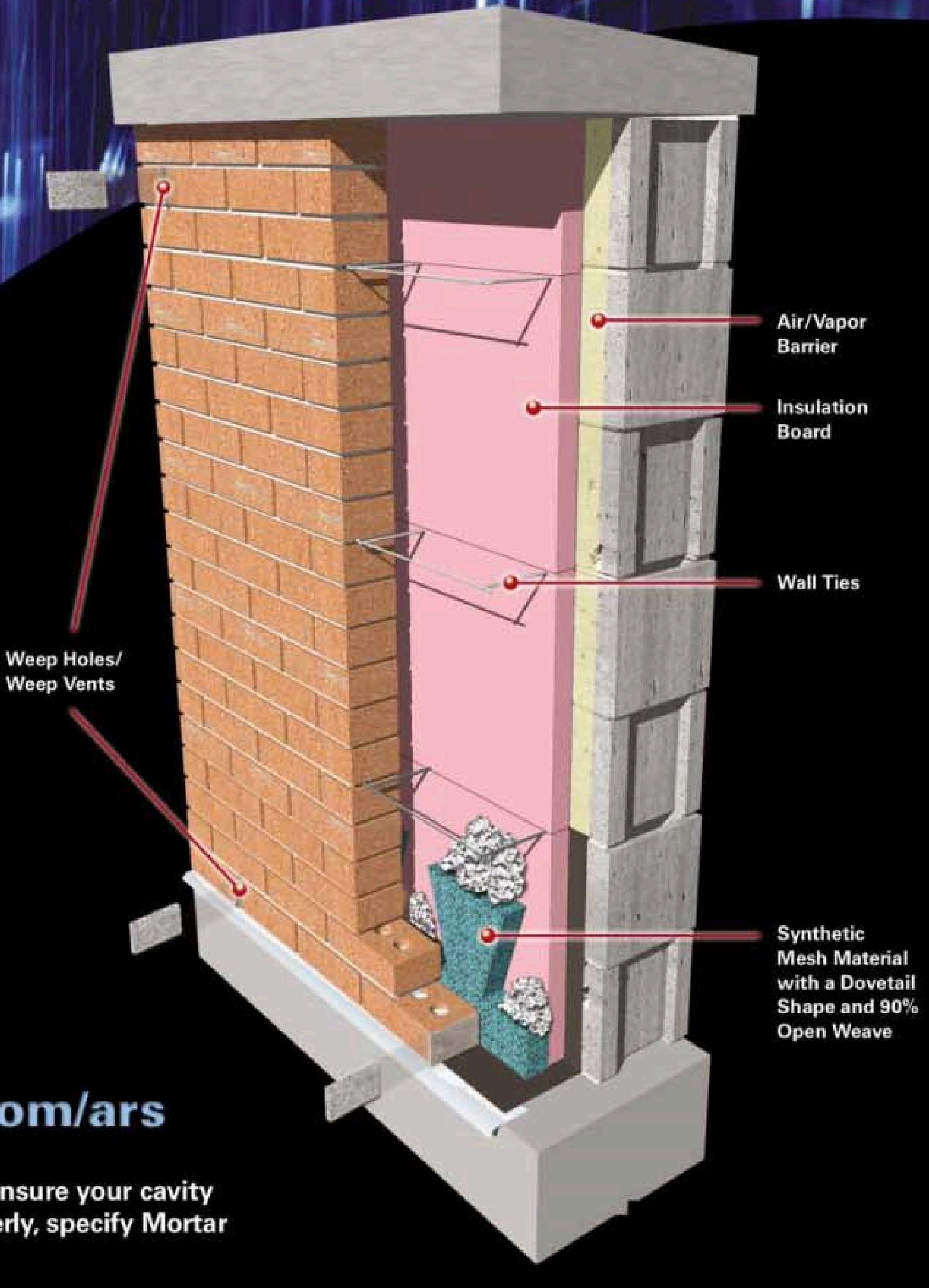
Further testing involved Mortar Net® and a straight strip product. Results were conclusive in determining that straight strip products created a complete horizontal blockage of the cavity, thus prohibiting proper ventilation and potentially obstructing water drainage.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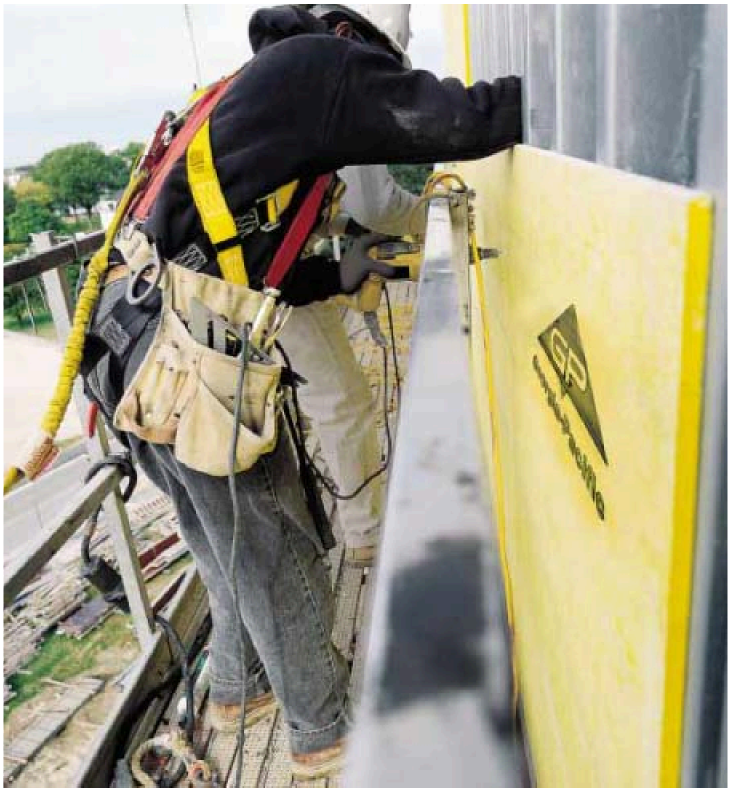

Georgia Pacific's DensGlass Gold Exterior Guard, a paperless glass-matted panel, has become a popular choice for exterior sheathing because it eliminates paper, a source for mold if the material gets wet during construction.

PHOTOGRAPHY: COURTESY GEORGIA PACIFIC

of architecture at the University of Texas at Austin.

In addition, greater efforts were being made to seal buildings and maintain positive interior air pressure with respect to the outside air to prevent unwanted infiltration through inevitable small cracks in the envelope. This legitimate strategy, however, was often unwittingly compromised by localized pockets of negative pressure created, for example, by a bathroom exhaust fan or rooms that are not adequately served by fully ducted return air vents. Although the overall building may have positive pressure, these localized pockets could inadvertently draw in moist air from the outside via poorly sealed portions of the building envelope, often traveling long and circuitous distances via the complex network of relatively hollow wall cavities and plenums common in most buildings.

Meanwhile, growing concerns over indoor air quality encouraged significant air-exchange requirements that are frequently satisfied by purposely drawing outside air into the building. Unless this air is dehumidified before mixing with the already conditioned air, the extra moisture from the outside is often too much for the air-conditioning to handle, especially in hot, humid climates. If the warm moist air hits a cooler surface, such as the interior gypsum board of an air-conditioned room or the cold-water supply pipe in a ceiling plenum, the vapor from the moist air will condense and mold will form on the wallboard or on the ceiling tiles below the pipe. In its effort to save energy, the industry forgot about the properties of moisture.

This complex combination of multidisciplinary and sometimes competing interests and seemingly invisible forces unintentionally created a situation in which greater amounts of moisture were being trapped in inappropriate places for longer periods of time and coming into contact with more vulnerable materials, leading to mold and other health and construction concerns. And because HVAC systems provide such efficient distribution pathways, conditioned air that has become contaminated with mold has sufficient opportunity to spread the spores, odors, and potential toxins around for people to inhale, causing problems to multiply.

To make matters worse, certain standards and codes have been written and adopted that, in some regions, unintentionally exacerbate the moisture problem. According to Lstiburek, the state of Minnesota requires insulation and a vapor barrier on the interior of a basement wall, blocking the only direction in which the subterranean wall could possibly dry out; and in Miami, where the air in the attic is typically drier than the outdoors, ventilation systems originally designed to take moisture out of a humid attic in the north are inappropriately required. Lstiburek also believes that the amount of fresh air that is often brought into commercial buildings (currently stipulated at 20 cfm/person by ASHRAE Standard 62.1, "Ventilation and Acceptable Indoor Air Quality") is too high: In hot, humid climates it actually brings too much moisture inside, thus causing the very problems that the standard intended to prevent. By stating that "some existing codes may inadvertently promote dampness," the Institute of Medicine's report supports Lstiburek's contention that, at least in some regions, the moisture problem has become institutionalized.

An integrated solution

Fortunately, the conditions that lead to dampness and mold are generally understood by building scientists who study these phenomena, and strategies to prevent such problems are available (see resource table for helpful organizations and Web sites on page 178).

For architects to apply many of these strategies, it is critical that they become familiar with the natural flow patterns of air, heat, and moisture, which follow from basic laws of physics: Heat flows from warm to cold; moisture flows from warm to cold and from more to less (but, Lstiburek adds, "if these two are different, which is highly unusual, 'more to less' beats 'warm to cold' "); air flows from higher to lower pressure; and gravity acts down.

Susan Doll, an associate at Environmental Health & Engineering, in Newton, Massachusetts, encourages architects to think about moisture dynamics: "Where does it come from—outside climate or interior activities (such as cooking, bathing, or even breathing)? And where does it go—into materials, air, or a condensation pan?"

To prevent mold from becoming a building problem, let alone a potential health menace, architects must minimize the amount of water—both in liquid and vapor form—entering a building, provide methods or details for it to be removed if and when it does enter, and specify materials appropriate to the moisture conditions. Appropriate strategies range from the obvious, such as sloping grade away from the structure and properly flashing all envelope penetrations, to the more obscure, such as thoroughly sealing the envelope with air barriers and creating consistent positive pressure throughout the building—even within wall cavities, ceiling plenums, and areas that house mechanical equipment—so outside air is not drawn in accidentally by the HVAC system.

TO PREVENT MOLD FROM BECOMING A PROBLEM, ARCHITECTS MUST MINIMIZE WATER ENTERING A BUILDING.

Recognizing the multidisciplinary, multiphase, and regional variations of the moisture and mold problem, some clients who repeatedly build in different parts of the country are beginning to enlist moisture experts to monitor all facets of a project, from building envelope to mechanical systems, that affect building moisture at the various phases of design and construction. David Odom, senior consultant with

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Liberty Building Diagnostics Group, a building-forensics firm in Orlando, Florida, has worked with the Walt Disney Company, the U.S. Army, and now Harrah's Entertainment, which is headquartered in Las Vegas but operates casinos around the country. As an independent consultant, Odom conducts design peer reviews that focus on building performance rather than initial cost, schedule, or constructability, which are already being considered by many other team members. He looks for problem areas and standard-of-care issues, as would an expert witness in a lawsuit. "We lead the team through that process when it is not adversarial," says Odom. "By doing so, it forces everyone to better define how the building will likely operate once it's constructed."

And for those projects that don't have the budget for this added layer of scrutiny, Gita Dev suggests that architects be more careful about which mechanical engineers they work with and pay more attention to construction administration. "The architect must be extremely demanding that details be met, and point out potential issues to the owner," says Dev.

The mold story may, strangely enough, have a happy ending: Armed with knowledge of mold and its prevention, architects may be in a better position to convince building owners, who are increasingly fearful of the fuzzy fungi, to spend a little more on quality design, construction, and on-site observation to prevent a future invasion of the nasty gunk. The result could lead to better quality design and construction overall. ■

Mold Prevention Resources

The following public and private organizations offer a range of useful information on mold prevention and mitigation:

Building Science Corporation
www.buildingscience.com/resources/mold

Energy & Environmental Building Association
www.eeba.org

Florida Solar Energy Center
www.fsec.ucf.edu

MidAtlantic Environmental Hygiene Resource Center
www.mehrc.org

NAHB Research Center's ToolBase Services
www.toolbase.org

U.S. DOE's Building America Program
www.buildingamerica.gov

U.S. EPA's Indoor Environments Division
www.epa.gov/iaq/molds/moldresources.html

CDC's National Center for Environmental Health
www.cdc.gov/nceh/airpollution/mold

AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION

INSTRUCTIONS

- ◆ **Read the article "Mold May Not Be a Severe Health Menace, But It Is Still a Complex Problem" using the learning objectives provided.**
- ◆ **Complete the questions below, then fill in your answers (page 226).**
- ◆ **Fill out and submit the AIA/CES education reporting form (page 226) or download the form at www.architecturalrecord.com to receive one AIA learning unit.**

QUESTIONS

1. The *Damp Indoor Spaces and Health* report stated that excessive indoor dampness is conducive to all except which?
a. mold and bacteria in buildings
b. dust mites and cockroaches in buildings
c. chemical and particle emissions from building materials
d. health problems in people with strong immune systems

2. Mold is which type of organism?
a. animal
b. insect
c. fungus
d. bacteria

3. What causes mold to have a musty smell?
a. mixing with moisture
b. colds release VOCs that smell
c. when mold spores land they release the smell
d. mold releases the smell as it digests food

4. Which percentage of relative humidity is not conducive to mold growth?
a. 95
b. 85
c. 75
d. 65

5. Which percentage of relative humidity is not comfortable for humans?
a. 65
b. 55
c. 45
d. 25

6. Mold has become a recent building problem because of modern construction materials that are which?
a. moisture storing
b. moisture transferring
c. moisture impermeable
d. mixed with water before hardening

7. Vapor will cause moisture to grow in which condition?
a. when warm moist air hits a cooler surface
b. when cool moist air hits a warmer surface
c. when warm dry air hits a moist surface
d. when cool dry air hits a moist surface

8. Increasing the draw of outside air may not solve mold problems because of which factor?
a. the heat of the outside air may be too much for the A/C unit to cool
b. the velocity of added air may be too much for the A/C to handle
c. the pollutants from the outside air may be too much for the A/C unit to clean
d. the extra moisture from the outside air may be too much for the A/C unit to dehumidify

9. To prevent mold from becoming a building problem, architects must always do which?
a. minimize the amount of fresh air entering a building
b. provide methods for mold to be removed from a building
c. specify materials appropriate to the moisture condition
d. thoroughly seal the building envelope

10. Which of the following statements is not true?
a. heat flows from warm to cold
b. moisture will flow from warm to cold before more to less
c. moisture flows from more to less
d. moisture flows from warm to cold

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ACOUSTICS INSULATION MANUFACTURED STONE VENEER ROOFING SIDING

Tech Commentary

Why building information modeling isn't working ... yet

By Ken Sanders, FAIA

"Are you doing it?" During last January's Technology in Construction conference in Orlando, Florida, designers posed that question to each other about building information modeling (BIM), long billed as the technological sine qua non for efficient and cost-effective design and construction. But most designers, it seems, are taking a wait-and-see attitude about BIM—interested in its benefits, but hesitant to adopt it unless assured of a return on the significant investment it entails. Nearly 10 years after his seminal book, The Digital Architect, *was published, architect Ken Sanders weighs in on the BIM discussion.*

Building information modeling (BIM) is the latest rebranding of a 25-year-old idea that architects should create intelligent 3D models instead of paper drawings to communicate design ideas and guide construction. Today, it's hard to peruse a professional journal or an AIA practice conference agenda without reading about BIM, and software vendors and consultants continue to promote it as the solution to waste and inefficiency in building design and construction. After all, why can't we make buildings like Boeing makes airplanes?

Yet, after decades of research, software development, and consultant evangelism, the industry has yet to reach the tipping point where a critical mass of owners, designers, and builders embrace the methodology and its use becomes commonplace. If the idea is so strong and the return on investment so attractive, why hasn't that happened? A decade ago, the technology seemed two or three years away; today, it still seems two or three years away. Like the dilemma confronting TV weatherman Phil Connors, played by Bill Murray in the film *Groundhog Day*, how and when will we awaken to a different reality?

Ken Sanders, FAIA, is chief information officer and managing principal of design and delivery systems at Gensler Architecture in San Francisco.

Wheels and wings versus bricks and mortar

The design community must first recognize the differences between the design and construction industry and manufacturing industries that create mass-produced products. As software developers borrow ideas from the latter industries, they also need to recognize what makes ours unique: how its economics are different, and how creating complex, one-of-a-kind products requires a broadly distributed, specialized work effort and method of decision making.

The automobile and aerospace industries, for example, enjoy economies of scale that building design and construction don't. Mass production allows amortization of costs: It's easier to pay for detailed digital models, including initial and ongoing training costs for personnel, when you're building hundreds or thousands of the products being modeled. Products that can be easily transported are more suitable for start-to-finish factory construction—but unlike airplanes or cars, the final assembly of most buildings must occur on-site. Even when architects and contractors offer services that involve customized mass production, such as implementing a new retail store prototype, they confront a dizzying array of conflicting local codes and regulations, as well as varying standards and methods of the local

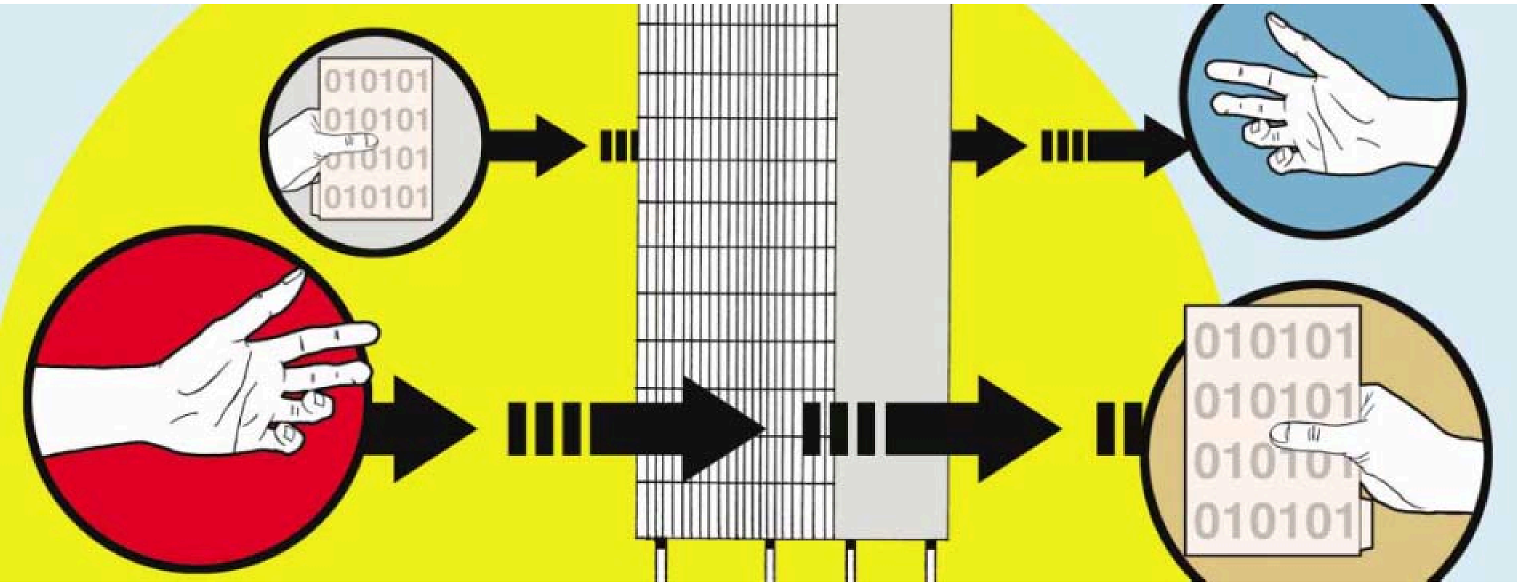

ILLUSTRATION: © MARK DANIELSON

construction trades. Finally, and most importantly, cars and planes are the products of an *integrated* design-build process: The designer and builder are one and the same entity. This is rarely the case with building design and construction.

Do these differences mean that architects shouldn't pursue new delivery methods, or investigate new technologies, or adapt ideas from other industries? Of course not. But recognizing the distinctions is an important first step.

Paving new roads

Although BIM has yet to achieve widespread use among design firms, many new buildings realize the benefits of digitally enabled manufacturing each day. A variety of building components and subsystems are factory-built using digital processes: doors and windows, carpets and fabrics, furniture systems, mechanical equipment, elevators. Although our profession has benefited from these manufacturing innovations, most architects can neither claim credit for them nor extract much value from them.

Some architects are collaborating with manufacturers to accelerate this trend. In their fascinating book *Refabricating Architecture* (2004), for example, architects Stephen Kieran and James Timberlake describe how increasing the size of premanufactured "chunks" of buildings, and reducing the number of assembly joints between them, can help lower costs and streamline construction.

The key prerequisite to achieving these innovations, however, is *not* more digital technology. It is creating new partnerships between owners, designers, and builders; developing organizational cultures and educational programs that support them; and inventing new delivery processes to leverage them. Gehry Partners is often held up as the paragon of this approach, and rightly so: The firm collaborates directly with contractors, fabricators, and suppliers in order to realize Gehry's unique designs, and strives to overcome the legal and institutional barriers that impede the process.

Without these fundamental changes in the culture of our profession, the value opportunity of BIM will remain out of our reach. Trying to implement BIM without first focusing on organizational transformation is like trying to drive a car on an ungraded, unpaved road: It's a long, hard slog.

Timing the market

Where is the client demand for BIM? After starting slowly during the 1980s, the adoption of 2D CAD among design firms rose quickly in the early 1990s as owners began requesting digital drawings from architects, and powerful computers became cheap and ubiquitous enough to deliver them cost-effectively. More than 10 years later, however, broad client demand for 3D building models has yet to materialize.

A modest but growing number of public and private clients, however, including GSA, Disney, and Intel, are starting to explore BIM and pursue integrated delivery approaches. Their common interest is ownership of facilities that extends beyond construction completion. Many clients wonder why designers and builders aren't offering new delivery solutions that address the unpredictability and adversarial nature of the traditional design-bid-build process. The Construction Users Roundtable (CURT), whose objective is to maintain an "owner's voice" in the industry, has emerged as a powerful advocate for process innovations. Since its founding four years ago, CURT has grown to include over 50 of the largest corporate clients in the U.S., including Citigroup, General Electric, GlaxoSmithKline, IBM, and Procter & Gamble. *[Note:* RECORD *publisher McGraw-Hill is a member.]*

IMPLEMENTING BIM WITHOUT CHANGING ORGANIZATIONAL BEHAVIOR FIRST IS LIKE DRIVING A CAR ON AN UNGRADED, UNPAVED ROAD: IT'S A LONG, HARD SLOG.

Without a strong client advocate, or an integrated approach to design and construction, BIM technologies remain difficult to leverage. It's challenging to confront the risks inherent in implementing new processes that seem to reward one party for costs and risks incurred by another. Indeed, one might argue that it's easier and cheaper for our profession to continue to practice using our traditional methods.

But clients are clearly asking for something different. As architects, we have a professional responsibility to learn how to package our services in collaboration with those who construct our designs; to resolve the imbalance between investment and reward; and to create an integrated solution with fewer elements of risk for all parties. The growing influence of organizations like CURT highlights this as-yet-unrealized opportunity for our profession and for builders.

New perspectives

Phil Connors escaped Groundhog Day by gaining new perspectives and discarding old habits. Many in our industry should follow his lead. The AIA and Association of General Contractors (AGC), for example, should expand their collaborative relationship, focus on their shared interests, align their lobbying efforts, and work together to dismantle the legal and institutional barriers to integrated design and construction. As a first step, the AIA and AGC should work closely with insurance providers and client groups such as CURT and merge their competing design-build agreements into a single, unified standard.

CAD software developers, including Autodesk, Bentley, and Graphisoft, should also establish new collaborative partnerships and develop consistent, reliable methods for sharing 2D and 3D data among their programs. Earlier this year, after 15 years of bitter rivalry, Microsoft and Sun Microsystems set a great example by agreeing to a new framework of interoperability between their products. Both companies responded to customers no longer willing to shoulder the cost of integrating incompatible technologies, and it's time for CAD vendors to do the same.

The leading candidate for standardized digital building descriptions remains the Industry Foundation Class (IFC) standard, developed by the International Alliance for Interoperability (IAI). *[Note:* RECORD *publisher McGraw-Hill was a founding member of IAI.]* The IAI needs to focus on implementing standards they've already proposed, and recognize that rigid compliance with a one-size-fits-all solution is less important than the adoption of well-documented, *flexible* data-sharing protocols ("digital handshakes") among multiple software programs.

In the meantime, architects shouldn't wait for any of this before collaborating with their clients, consultants, and contractors to develop streamlined delivery methods using existing technology. BIM and 3D CAD aren't necessarily prerequisites to doing so; a substantial volume of reusable data can continue to reside in 2D representations of buildings. The critical path isn't BIM, but rather process innovation squarely focused on people, partnerships, shared expertise, and timely decision making.

With the economy on the rebound and the construction market holding steady, there has never been a better opportunity for architects, owners, and contractors to work together to reinvent and streamline the building design and delivery process. The remaining question for architects is simple: Will you lead or will you follow? ■

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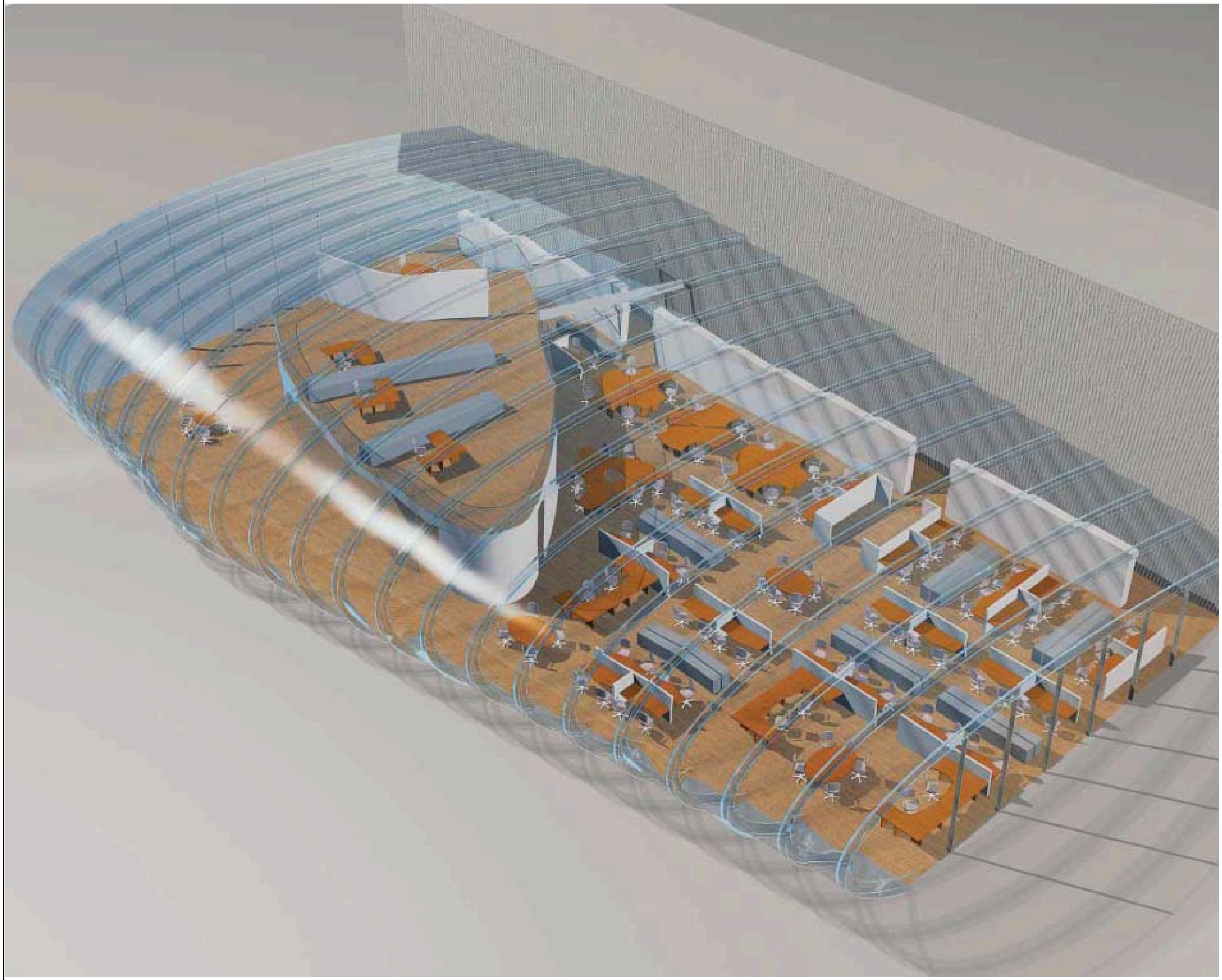
Zoom In

SCL Glass Headquarters & Showroom

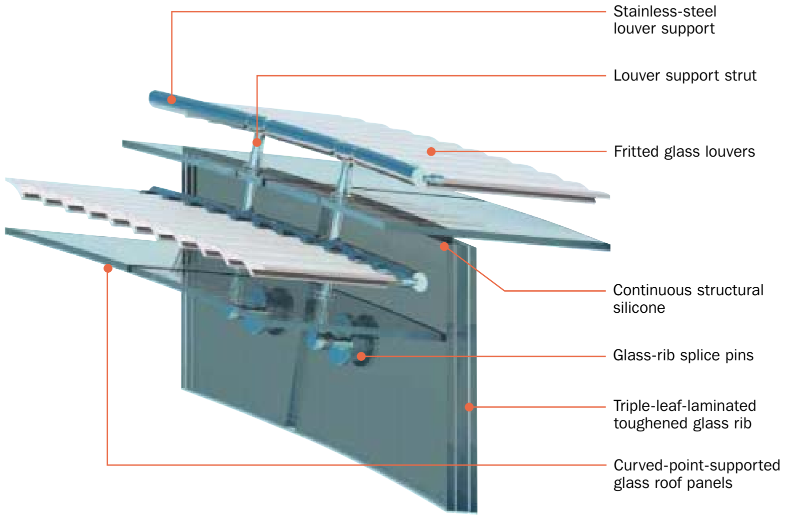
Yatala, Brisbane, Australia

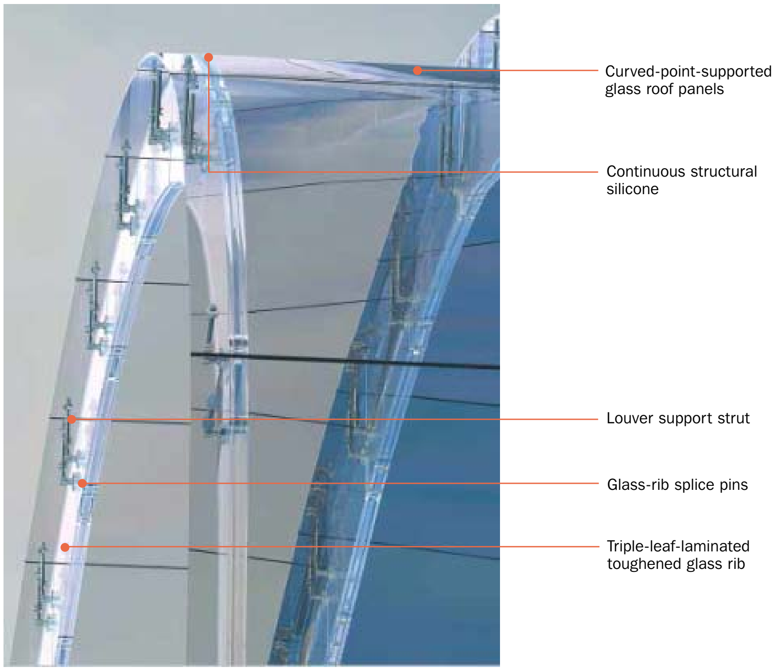
By Deborah Snoonian, P.E.

Glass—it's not just for windows anymore. When SCL Glass decided to build a manufacturing plant in Australia, they turned to Front (www.frontinc.com), a design and structural engineering firm based in New York that specializes in facade consulting, to create an office and showroom that could demonstrate the factory's capabilities. Partners Martin Riese and Marc Simmons learned the art of structural design with glass while working for the firms of Dewhurst MacFarlane and Foster and Partners. Their scheme for SCL's showroom (below) will feature a 70-by-130-foot enclosure composed of overlapping, curved ribs of toughened glass. Each rib comprises multiple panels of glass, manufactured by SCL directly from digital shop drawings that Front will produce using CATIA. The project will be completed in fall 2005.



IMAGES: COURTESY FRONT


Stainless-steel louver support
Louver support strut
Fritted glass louvers
Continuous structural silicone
Glass-rib splice pins
Triple-leaf-laminated toughened glass rib
Curved-point-supported glass roof panels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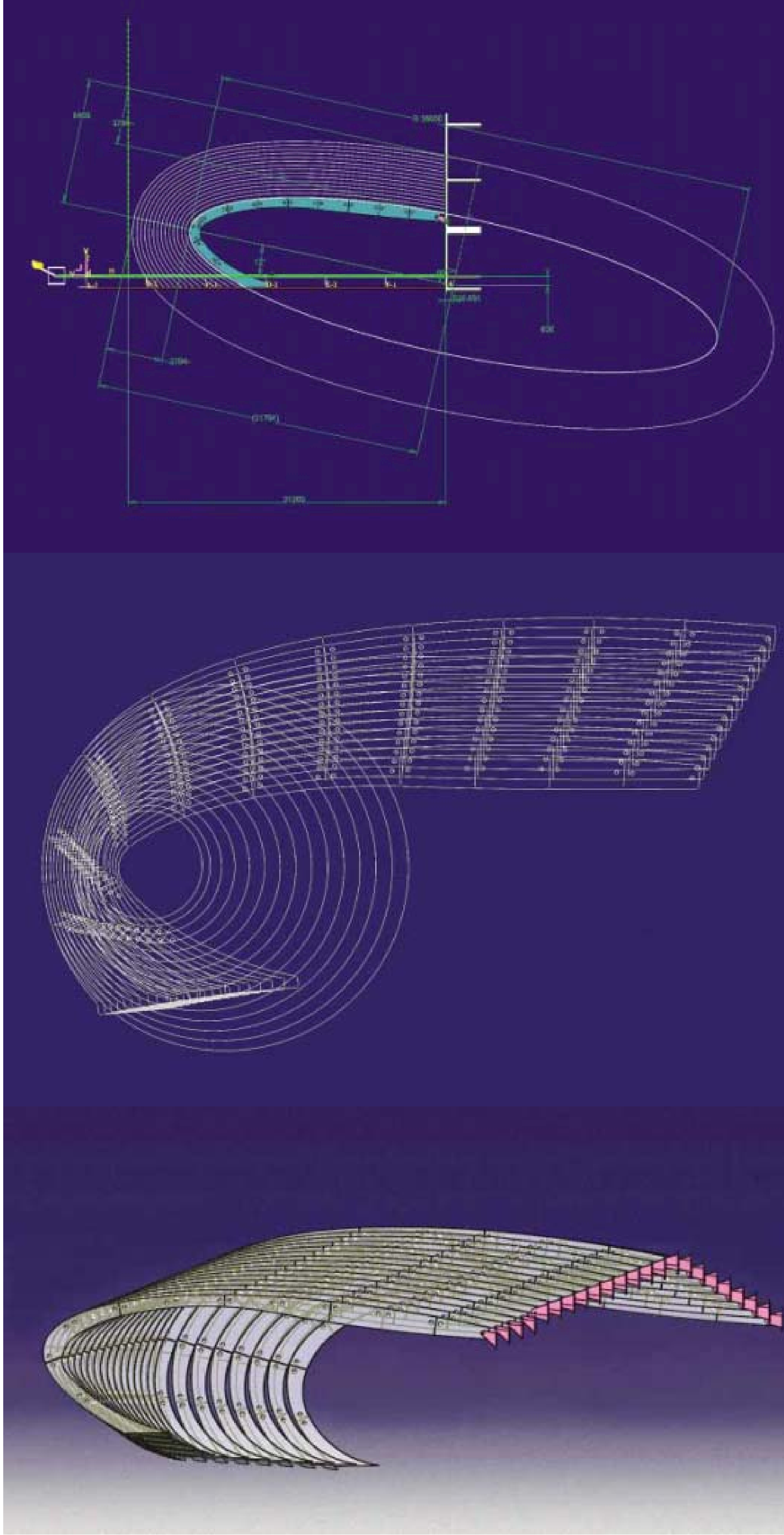

The designers began with an elliptical shape (top), which was refined to meet manufacturing capabilities. Working in CATIA, they transformed the ellipse into radial geometry that's factory- and glass-friendly (middle). The rib forms (bottom) were refined further to express the structural forces being supported, namely the bending-moment diagram, which maximizes the structure's efficiency.

DESIGN: malarelli studio

CERAMIC TILES OF ITALY DESIGN COMPETITION 2005

The Ceramic Tiles of Italy Design Competition, now in its twelfth year, recognizes outstanding achievement by North American architects or interior designers using Italian ceramic tile in commercial, institutional or residential installations. Projects are judged on their creative attributes as well as how they meet their functional and technical requirements. Domestic and international new construction and renovation projects are eligible.

Sponsored by:
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$5000 will be awarded for each category (residential, commercial, and institutional) during Coverings in Orlando, Florida, May 3-6, 2005. Winners will also be eligible for a free trip to Bologna, Italy to attend Cersaie, September 27-October 2, 2005.

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Ceramic Tiles of Italy

Tech Briefs

BYTES

Later this year, in Laramie County, Wyoming, Underwriters Laboratories (UL) will open the first commercial wind-turbine testing and certification facility in the U.S., UL has been certifying wind turbines since 2002.

By 2006, the country of Singapore will implement a digital code-checking and permit-processing system for government projects. Designers will be required to submit digital models of buildings in place of paper drawings for approval.

The State of California recently completed the first set of green guidelines geared toward multifamily housing. The guidelines are available online at www.multifamilygreen.org.

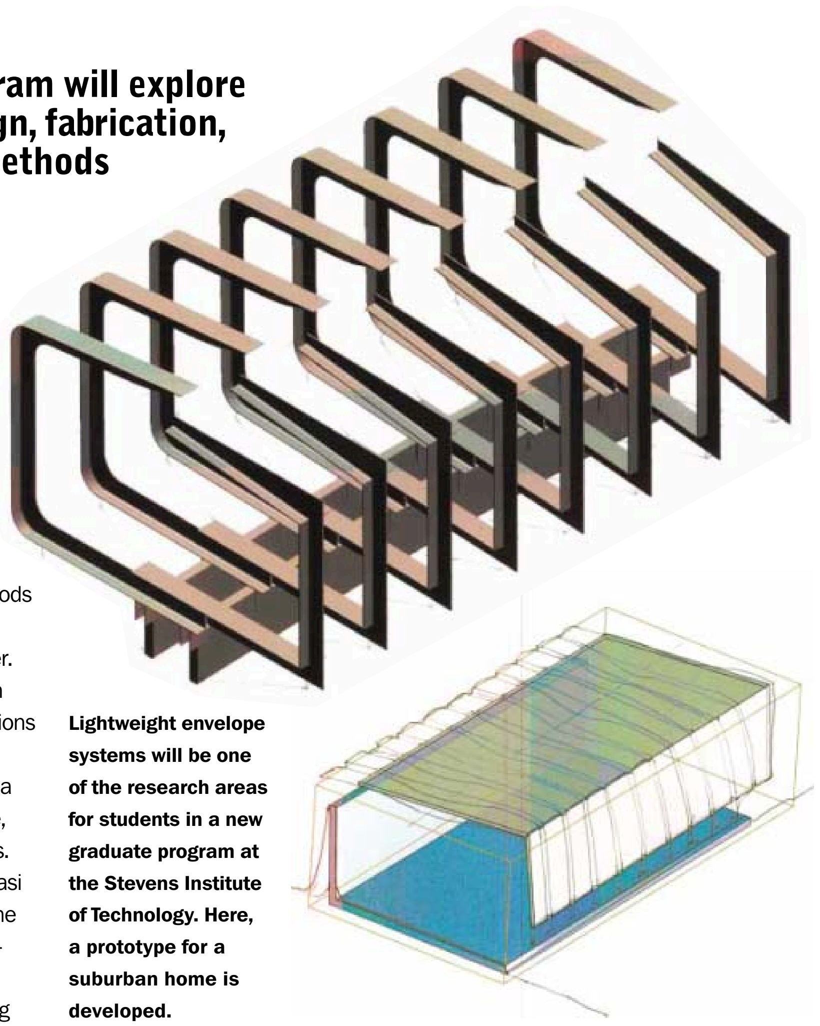
MIT and Loughborough University in the United Kingdom will jointly create a simulation system for the development and analysis of control systems for HVAC equipment.

The Portland Cement Association recently announced a new initiative, the Cement Manufacturing Sustainability Program, which will provide designers with environmental information about the use of cement in construction, as well as encourage environmentally-friendly manufacturing practices.

In July, ASHRAE released a new, voluntary thermal-comfort standard that comprises a variety of building types and provides guidance for designing naturally ventilated spaces in particular climates.

The AIA and the National Institute of Building Sciences are joining forces to establish local building enclosure councils (BECs) in cities across the U.S. Each council will promote education, training, and best practices for design of building envelopes.

New graduate program will explore innovations in design, fabrication, and construction methods



Lightweight envelope systems will be one of the research areas for students in a new graduate program at the Stevens Institute of Technology. Here, a prototype for a suburban home is developed.

IMAGES: COURTESY JOHN NASTASI

This fall, 20 students will begin a course of graduate study at the Stevens Institute of Technology in Hoboken, New Jersey—the inaugural class of a new interdisciplinary program that will earn them a master's degree in product architecture and engineering. The program's founder and director, architect John Nastasi, hopes it will encourage future building professionals to embrace collaborative work methods as they strive to realize complex designs in a cost-effective manner. "The program brings into question long-standing and separate traditions in the education of designers and engineers, and in doing so forges a distinctive fusion of design culture, technology, and services," he says.

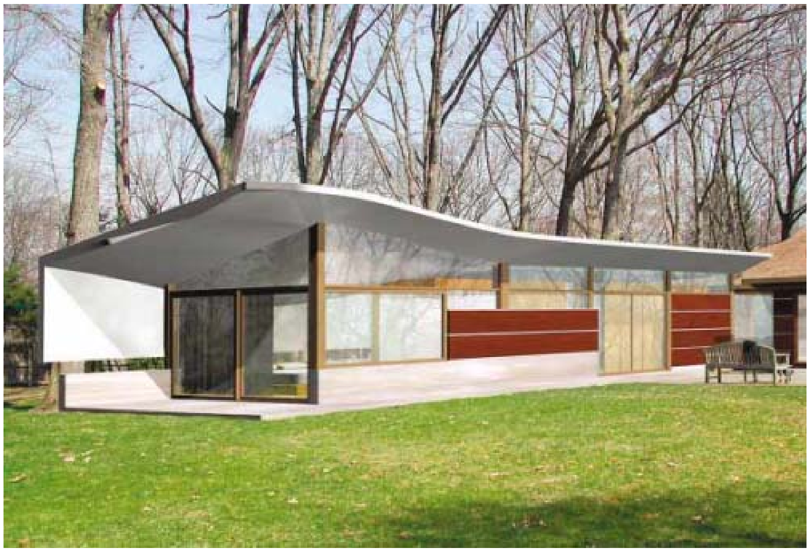
Throughout his career, Nastasi has pursued projects that combine his interests in digital media, construction techniques, advanced materials, and new manufacturing and assembly methods for buildings. An alum of the Pratt Institute and Harvard's Graduate School of Design, and winner of the Architectural League of New York's Young Architect's Award in 1995, he established his Hoboken-based firm, Nastasi Architects, some 15 years ago. With its portfolio of residential and small-scale commercial work, the firm, he says, "has always been about design-build," which allows him to explore innovations more easily.

Engineering a new curriculum

Why would an architect approach an engineering school to create an academic program rooted in the training (or more accurately, the retraining) of designers? Nastasi chose Stevens because he believed he could leverage its research resources and the existing laboratory infrastructure of the school's Design and Manufacturing Institute to get the program off the ground quickly. "Right now, there are mostly token programs at schools of architecture that look at production technologies and advanced fabrication methods," he maintains. "I was being turned away by the schools I approached." Not so at Stevens, which gave him the green light to develop the program in fall 2003. Even before its inception, it has already captured the attention of innovators in the industry. Gehry Technologies and TriPyramid Structures, an integrated design and manufacturing company based in Westford, Massachusetts, are among the program's advisers and possible collaborators on future research projects.

The entering student body—a mix of architects, engineers, and product designers—will study buildings and their component parts with an emphasis on understanding design and production technologies, so that they may "seek sophisticated ways to build sophisticated forms," Nastasi says. The program is headquartered in the same building where Stevens's Carnegie Laboratory is located—a facility that boasts some $5 million worth of equipment. Stevens invested $250,000 in a new product-architecture lab—a suite of PCs and Macs; design software such as CATIA, Maya, Rhino, and ProEngineer (a computer-aided manufacturing program); video editing and digital imaging software; 3D scanners; and other gear for visualizing and producing student work.

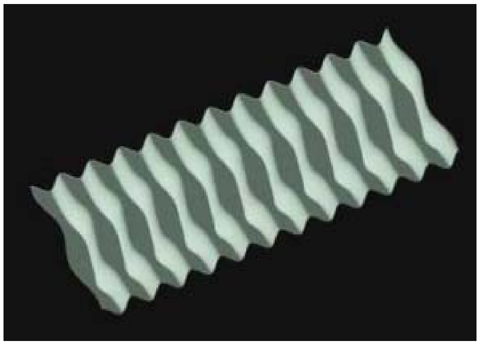
Tech Briefs



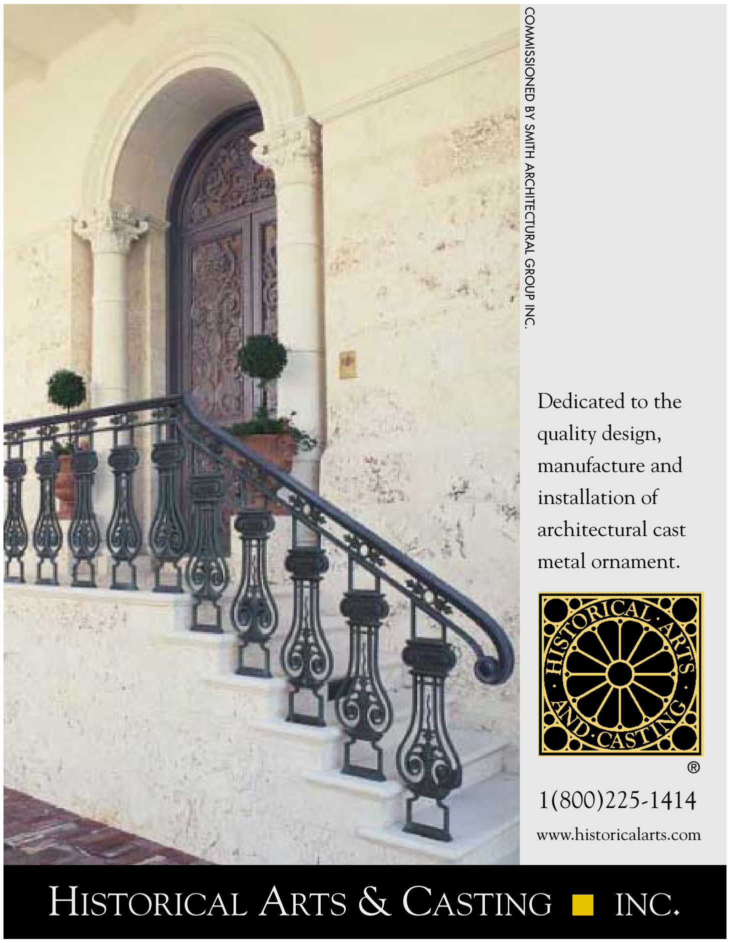
New materials and methods

Nastasi's projects will provide fodder for student research into mass customization, lightweight envelope systems, and advanced materials. One of his ongoing efforts involves the design of a prototype for a 2-bedroom, 1,500-square-foot suburban home to be built in Woodcliffe Lake, New Jersey (top right). The house will be constructed from a kit of parts, with some subassemblies put together off-site and later shipped via truck to the building site for final erection. He's also designing a speaker pavilion in Princeton, New Jersey, for Cornel West, the academic known for his provocative explorations of religion and racial issues. The pavilion is made of an aluminum honeycomb material used in the aerospace industry; Nastasi chose it for its simultaneous opacity, transparency, and reflectivity, which plumb "the ideas of barrier, threshold, and transparency" as they pertain to both architecture and race relations.

Though interested in the theoretical underpinnings of advanced technologies and materials, Nastasi wants his students to be rooted in pragmatism—trained to make buildings, not just talk about them. They might want to follow his example: He and his design team are building the pavilion in Princeton themselves, for instance, and had to custom-build a special jig to expand the honeycomb material from its delivered thickness of 4 inches to several feet. "I have 6,000 cuts on my hands from carrying this stuff around," he said. *Deborah Snoonian, P.E.*



A complex, folded-roof structure (left) may top a suburban prototype Nastasi's firm has designed (above), which would be made of CNC-filled foam and glass-reinforced fiber.



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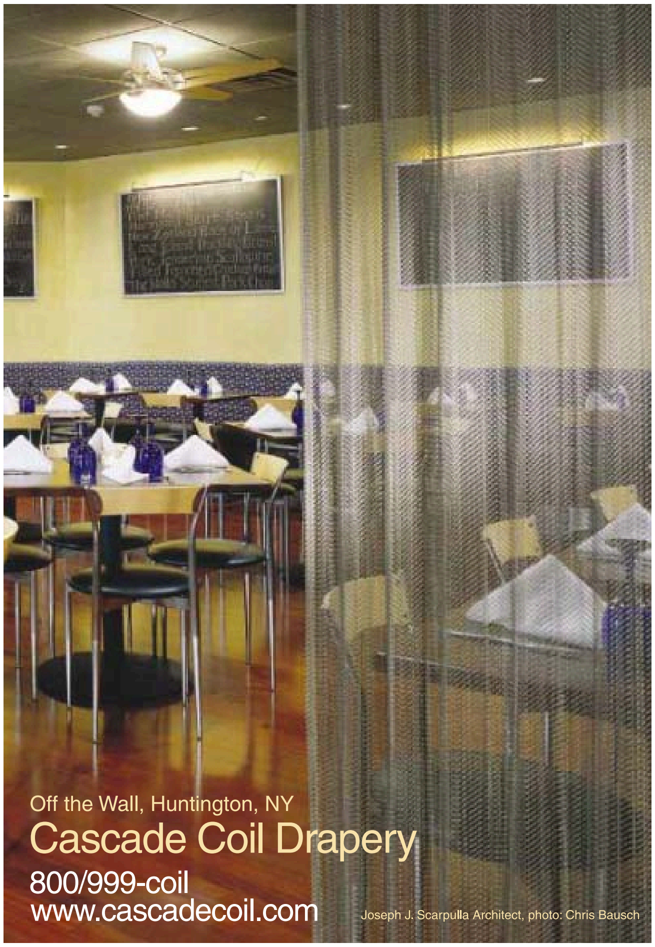

Off the Wall, Huntington, NY

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Tech Products

From mark-up to practice management

By Lee Anne Smith

SoftPlan reView

SoftPlan Systems
www.softplan.com
Windows only

SoftPlan, a CAD package geared to residential and light commercial construction, has recently released this addendum: A viewer and mark-up tool for non-SoftPlan users. Intended for on-site use and increased client and contractor communication during design, SoftPlan allows users to create reView files from SoftPlan drawings, then pass them on to the client, project team, builders, contractors, or others who need the information.

Mark-ups, comments, and sketches can be made directly to the reView file and then communicated through a PC or compatible handheld organizer to designers, who can then amend the original drawing files. When saving reView files from SoftPlan, users may allow viewers to print files to scale, include logos or photos, and add other "permissions" for various features. Designers can also create punch lists directly within reView files, making the add-on a handy portable tool for on-site management. To author reView files, users must purchase the plug-in for SoftPlan Version 12.5; to view and mark-up the files, a free viewer is available at the company's Web site.

Lee Anne Smith studied architecture at UNC Charlotte, where she edited a weekly student newsletter.

For more information on technology for architects, including reviews, vendor lists, and links, go to Digital Architect at **www.architecturalrecord.com**.

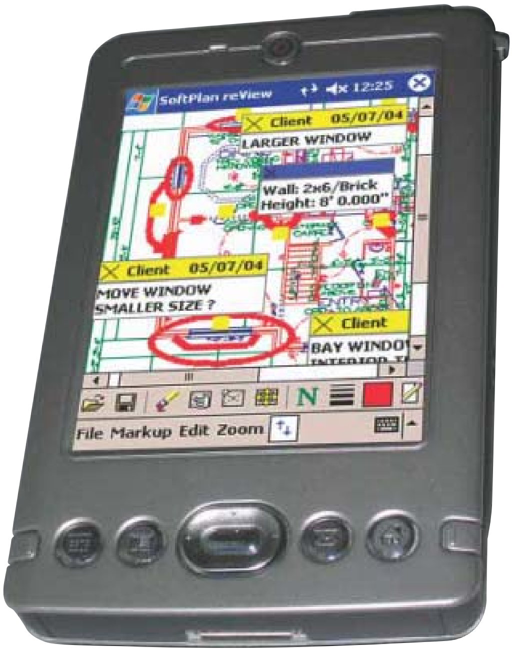
MediaPro 2.5

iView
www.iview-multimedia.com
Windows and Mac

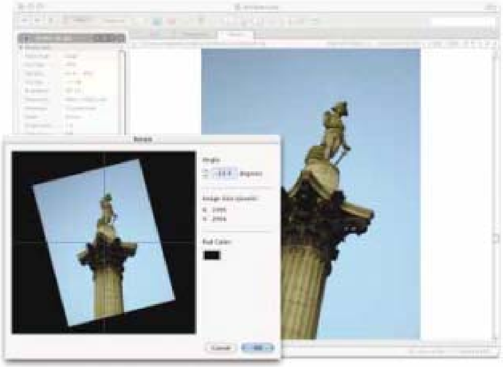
For firms in search of a digital asset-management tool, MediaPro 2.5 is a program for browsing, organizing, presenting, and cataloging large image and animation libraries. Once available only for Macs, the new Windows-compatible version has made it a more feasible option for design firms.

The software is capable of handling 130 different file formats, including JPEGs, Photoshop documents, EPS files, QuickTime videos, and others. Files may be imported into MediaPro catalogs through a simple drag-and-drop technique. Users may then add tags to each file to make them readily searchable and retrievable. Tags can include keywords, dates, project numbers, location information, and even voice and audio annotations.

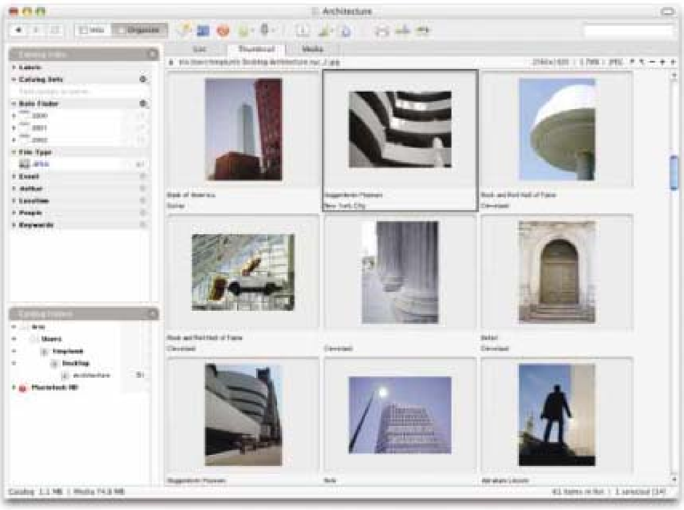
Once files are imported into a MediaPro catalog, users can organize them into folders and create custom slide shows, Web galleries, movies, PDF composites, and contact sheets directly from the software. Each catalog created in MediaPro can be exported directly to CDs or other storage media for backup. Each catalog can contain up to 128,000 files. Individual files can be viewed one by one or, alternately, shown as a file list or a set of thumbnails. A "folder-watching" feature lets users know when files have been added or updated. If desired, the tool can also be used to manipulate images—digital touch-ups are possible, as are color conversions and corrections for individual files or groups of similar files.



SoftPlan's reView tool lets users look over and mark up design drawings on either PCs or handheld organizers.



Users can leverage MediaPro's asset-management features to organize large libraries of digital photos and animation files.



IMAGES: COURTESY SOFTPLAN (TOP); IVIEW (BOTTOM)

Tech Products

SketchUp 4.0
@Last Software
www.sketch3d.com
Windows and Mac

SketchUp 4.0 is the latest version of this popular, reasonably priced 3D sketching tool. New features in this release include one called "Follow Me" that allows users to extrude or push a surface along a known path; "The Intersector," which lets designers connect and intersect different 3D shapes with a single mouse click; a "Texture Tweaker," in which photographs or textures can be overlaid and stretched along continuous 2D or 3D surfaces; and a new scripting interface for advanced users. The program also instinctively "fills" edges in order to render easy-to-manipulate geometries. And for projects where crisp line quality is not a necessity, such as initial concept drawings, there are options for softening the look of modeled objects.

Green Matrix
Ratcliff Architecture
www.greenmatrix.net
Windows and Mac

Once available only on CD-ROM, the Green Matrix Web site is an interactive tool that provides a template for the application and analysis of using LEED criteria in building design. Developed by a green-building design team at Ratcliff Architecture in Emeryville, California, the Web site features a matrix that cross-references the sustainability topics addressed by LEED, such as water conservation and energy efficiency, with project phases, such as master planning, schematic design, and design development. Users can click on any section of the matrix to receive an outline of recommendations for design. Cross-referencing "site sustainability" with "design development," for example, yields an outline providing information on the use of composting systems.

BillQuick 2004
BQE Software
www.bqe.com
Windows only

BillQuick 2004 is a time-billing and project-management package designed for small- to medium-size professional service firms. It provides a library of invoice types that can be customized for billing and maintenance of project and financial records. Fees, hourly charges, and other budget information can be scheduled directly within BillQuick for specific projects, allowing billing statements to be tailored according to individual clientele rates and contracts. Users can synchronize between BillQuick record and QuickBooks banking information to reconcile financial statements. Timesheet forms can also be set up within the software so that employees can enter hours worked on each project in as few as two keystrokes but are prevented from accessing confidential information like hourly rates.

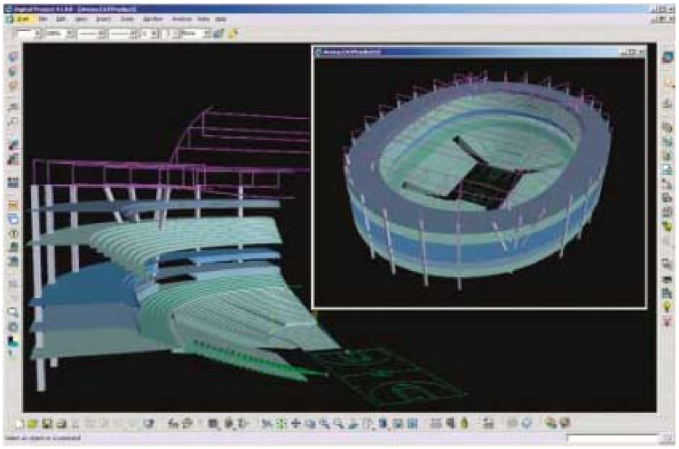
Digital Project
Gehry Technologies
www.gehrytechnologies.com
Windows only

The software gurus at Gehry Partners have taken their CATIA expertise and turned it into a high-end suite of software applications tailored to manage the entire life cycle of design and construction projects. Digital Project combines a powerful 3D software engine—with parametric tools for applying, tracking, and processing intelligent models of building systems—and the ability to manage data needed to enable digital manufacturing methods. It interfaces with common data-translation standards, including DXF, and allows users to extract 2D documents from 3D models.

Buildings modeled in SketchUp can be overlaid onto existing photographs.

Users can click on any section of the online Green Matrix to get design guidelines for incorporating sustainable principles into buildings.

With BillQuick 2004, firms can tailor invoices for billing and record keeping.


Gehry Technologies commercializes its first package, Digital Project.

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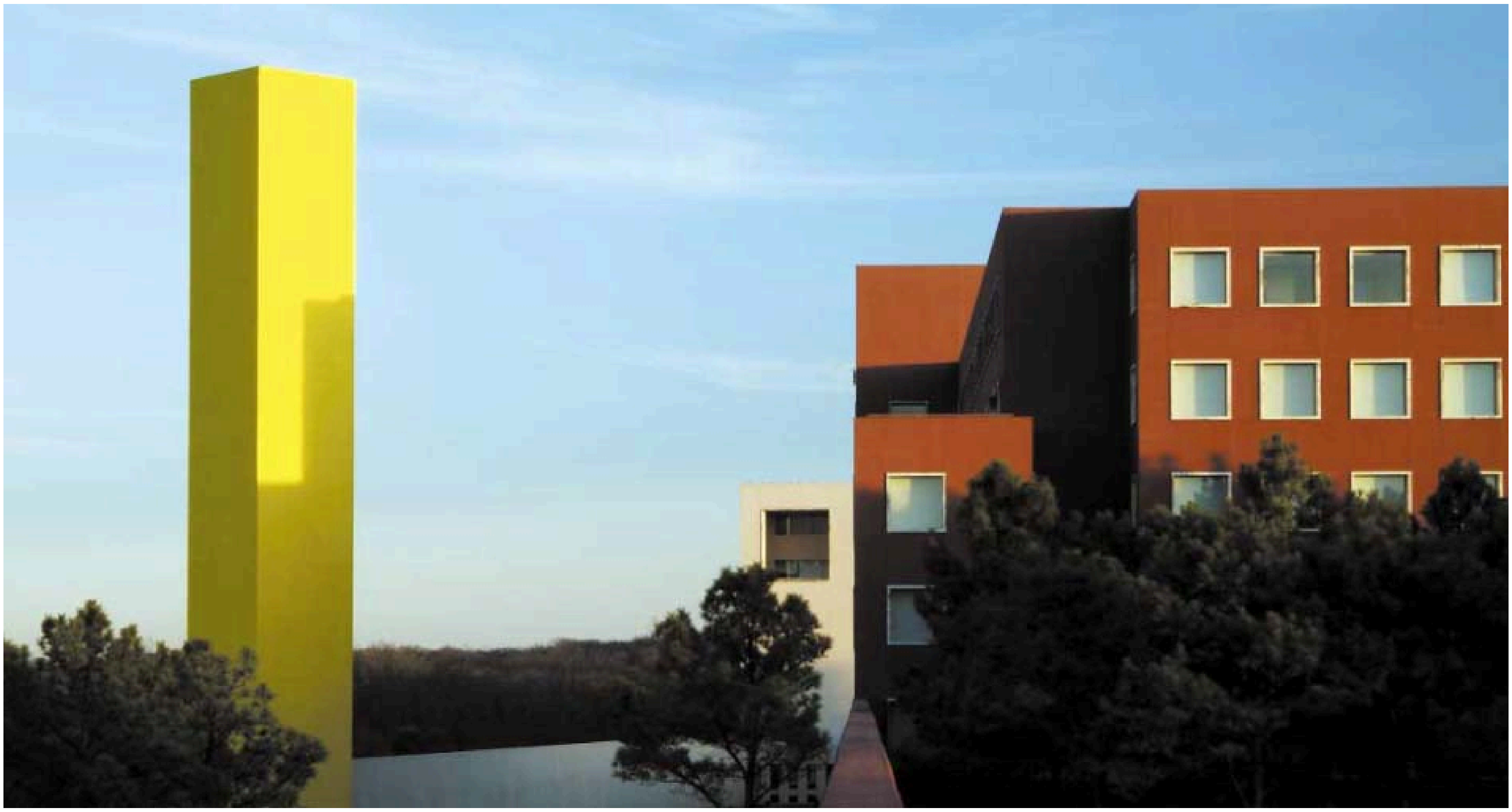


USG PRESENTS

Green product evaluation necessitates making trade-offs

By Richard C. (Rik) Master, AIA, CSI
Chair Emeritus, Specifications and Building Technology, Professional Interest Area (PIA), AIA
Manager, Architectural and Construction Systems, USG Corporation

CONTINUING EDUCATION

Use the learning objectives below to focus your study as you read **Green product evaluation necessitates making trade-offs.**

To earn one AIA/CES Learning Unit, including one hour of health safety welfare credit, answer the questions on page 201, then follow the reporting instructions on page 230 or go to the Continuing Education section on *archrecord.construction.com* and follow the reporting instructions.

LEARNING OBJECTIVES

After reading this article, you should be able to:

- *Better judge the sustainability of materials*
- *Specify "green"*
- *Understand and apply the concept of "embodied energy"*

ANY WAY YOU LOOK AT IT, SUSTAINABILITY HAS BECOME A FUNDAMENTAL PRINCIPLE UNDERLYING SUCCESSFUL BUILDING DESIGN. FROM A GLOBAL STANDPOINT, SUSTAINABILITY IS IMPERATIVE, as it offers a critically important means for conserving our dwindling natural resources. From an architectural business standpoint, it's becoming an increasingly important consideration, as a growing percentage of building owners and homeowners not only desire "green" buildings, but are now demanding them.

Green has, in fact, gone mainstream. Architects are giving high priority to environmental concerns in their product selection, builders and developers are acutely aware of how sustainability can impact project success and retailers are proactively promoting green products.

Despite its growing acceptance, sustainable building design remains a complex undertaking. Because environmental issues can — and should — be considered in virtually every aspect of the design process, specifiers need to have a working knowledge of a wide range of green definitions, criteria, standards and applications. Sustainability is a long-term evaluation of every decision made, without compromise to future generations.

This article will attempt to clarify some of the issues relative to green product selections and design specifications as they relate to walls, ceilings and substrates.

Green Product Selection

Green product selection is a key component of sustainable design. However, sustainable design should also encompass life-cycle analysis, product durability, embodied energy, the effect on indoor environmental quality, manufacturing locations and the company's environmental record and commitment. In general, green products have traditionally been defined as those that reduce, recycle and renew. Specifically, sustainable products:

- *Reduce* the amount of raw materials and/or the amount of energy needed. Lighter products generally require the use of less energy for transportation, storage and construction. The term "reduce" can also refer to decreasing the amount of material used and/or wasted, thereby fostering manufacturing efficiencies and optimal use of the material.
- Offer high *recycled* content and/or environmentally friendly reuses. The benefits here are obvious. Products with a high recycled content may decrease raw material usage, energy consumption and landfill waste. "Recycle" can also refer to the potential of a product being remade into that product again or into another product as in adaptive reuse (closing the loop).
- *Renew* the environment by using materials that can be regenerated and/or materials offering environmentally friendly benefits, including renewable resources such as agriculturally based materials or products made without chemically bound methods.

Defining Embodied Energy

The virtues of these principles must be considered in terms of how embodied energy and the life-cycle environmental impact of a material affect its sustainability. Embodied (or embedded) energy is the amount of non-renewable energy required to extract, manufacture, transport and construct building products. Embodied energy is this energy studied from a beginning point of obtaining all raw materials (cradle) until a finished use point (gate or market), instead of to the end of a useful life (grave).

"Cradle to grave" is not an appropriate term if we all understand there are options to simply disposing of old building materials in a landfill. Perhaps a better name is "cradle to reuse" or "cradle to cradle:" from the beginning to a new beginning. This consideration must be factored into all green product specifications, as it can significantly – and sometimes surprisingly – impact sustainable design.

Generally speaking, products with low embodied energy are good sustainable design choices, and products with low embodied energy are usually less expensive than products with higher embodied energy. However, this is not to say that products with high embodied energy are always poor sustainable choices.

A high-embodied-energy product may provide significant savings in energy usage over the life of a building. The initial high level of embodied energy in the product is more than compensated for by its ability to reduce a building's recurring long-term energy needs (such as heating and cooling).

One aspect of embodied energy that is sometimes overlooked is the amount of energy used in obtaining the raw materials utilized in making the product. Simply requiring all construction products to be made from recycled materials is often not as efficient from a sustainability viewpoint as one would think. In fact, the energy required to recover and reuse some materials can be much greater than simply producing new materials.

Wood is a prime example of this misconception. While construction and demolition (C&D) wood waste has many reuse options, refurbished lumber accounts for a small percentage of this waste reuse. Most of it is turned into other products ranging from chip-based panels to paper products to compost.

Through life-cycle assessment or embodied energy studies, we can see the effects of recycling products back into the same products.

Assessing Embodied Energy

Up to 95 percent[1] (65 percent is a more realistic value) of aluminum's embodied energy can be saved by using recycled material. This reflects the high energy consumption required in extracting and purifying aluminum from rock (glass made from sand can yield energy savings of 5 percent.[1]) These savings are reflected in the product's cost.

While glass is inexpensive in relationship to aluminum, the recycling savings for aluminum is much greater. But should you specify aluminum over glass? It depends on the use and how it affects your total design solution. This simple example shows the complexity involved in making product selections and developing sustainable product specifications.

So, what about other construction products? Paper, another wood-based product, is used throughout many designs. The use of secondary paper can save 35 percent[1].

Recaptured Gypsum

Most construction papers are made from the wood industry's leftovers, which include cardboard cut-offs or post-consumer papers (usually newspapers, catalogs or phone books). The face papers used on gypsum panels are 100 percent recycled paper, and some manufacturers started using recycled paper as early as the 1960s. As for the core material, which is primarily gypsum, air and starch, many manufacturers use a by-product gypsum source obtained from coal-burning power plants.

The coal burned in many of these power plants produces undesirable air pollutants, including sulfur dioxide. Wet limestone scrubbers are often used to prevent this pollution from entering the atmosphere. As the exhaust smoke from the power plant rises through the scrubber, its pollutants are chemically removed. The calcium and water in the wet limestone combine with the sulfur dioxide to create calcium sulfate, or recaptured (flue-gas desulfurized) gypsum.

Manufactured from 95 percent recycled materials, the high-performance gypsum fiber products available include interior wall panels, floor underlayments and exterior sheathings.

Recaptured gypsum currently accounts for 25 percent of the gypsum needs of the U.S. construction market[2]. It is predicted that with the increased building of new power plants, the production of recaptured gypsum could account for up to 40 percent of the industry's annual gypsum requirements.

Wallboard manufactured from recaptured gypsum is indistinguishable in terms of performance, appearance and quality from panels made from natural gypsum rock. Given these benefits, the use of recaptured gypsum in drywall would seem to be a "win/win" situation. And in most cases, it is. Let's look at the embodied energy (cradle to market) of paper-faced drywall.

Obtaining raw materials accounts for less than 1 percent of the total (3.6 MJ/kg averaged across the U.S.) embodied energy, while manufacturing accounts for 80 percent[3], followed by raw material shipping (15 percent[3]) and the remainder in shipping drywall from the plant to the distributor (4 percent[3]).

Because gypsum comprises the majority (95 percent) of the raw materials, why use recaptured gypsum if a manufacturer can obtain only 1 percent energy savings? There are several reasons for this, most notably that most power plants are built near large metropolitan areas where drywall demand is very high. Second, because the plants are located nearby, we can factor the raw material shipping energy into the potential savings (15 percent + 1 percent = 16 percent).

So, should we specify recaptured gypsum drywall in all markets? First of all, recaptured gypsum is not available in all parts of the U.S. When the transportation of recaptured panels or recaptured raw materials over a greater distance is factored in, the green value of the recaptured gypsum can be diminished significantly.

In fact, the energy consumption in extracting natural gypsum is so low it equals the fossil fuel used to ship it 50 miles by diesel truck[3]. Transportation requires the use of non-renewable fossil fuels that, under certain circumstances, can negate the benefits of an otherwise excellent sustainable product selection. Therefore, specifying drywall panels simply on their recycled content versus locally produced panels may not necessarily be environmentally sound.

So let's recap drywall and look at some additional interior construction products.

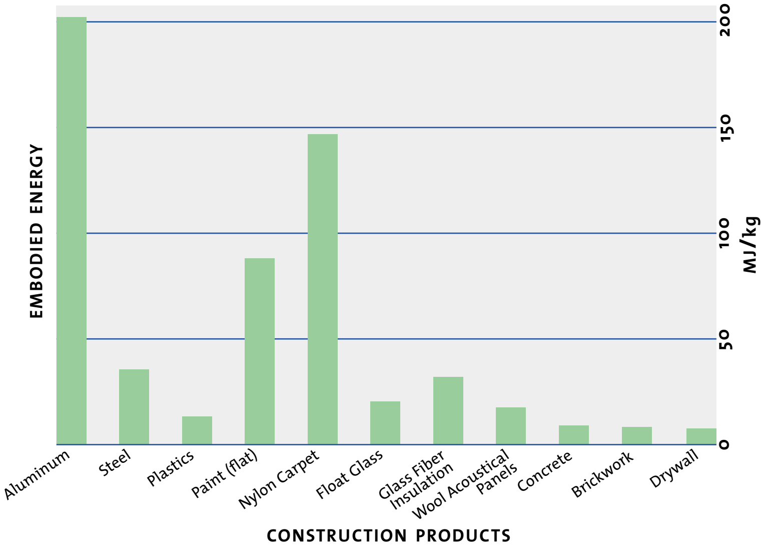
Gypsum Board Panels

Gypsum board scores extremely high on nearly all sustainable design criteria. Gypsum, the primary raw material used to make gypsum panels, forms naturally like salt or limestone, and is one of the most abundant minerals on the planet. It is neither rare nor endangered. The bulk of the remaining materials in gypsum board consist of paper (recycled from newspapers, phone books, old corrugated cartons and cardboard cuttings) and corn or wheat starch binders. These starch binders, which serve as the "glue" in the manufacturing process, are renewable agricultural resources.

The embodied energy of gypsum board is extremely low (see accompanying chart). Drywall has less embodied energy than a wide variety of building products, including brickwork, concrete, particle board, insulation, glass, vinyl flooring, plastics, steel and aluminum[1]. It is also important to note that manufacturing gypsum board is a low-waste production process. In fact, approximately 95 percent of the raw materials entering a board plant leave as finished product. And most of the remaining 5 percent is recycled into small strips used to support stacks of finished gypsum panels. Overall, high-efficiency board plants can produce less than 1 percent material waste.

Construction waste gypsum panels can be reground and made into new gypsum panels when the paper is removed. This waste can also be used for many other functions, including agricultural uses or concrete set material. It is estimated that about 8 million tons of construction and demolition drywall waste are generated each year.

Other reuses for drywall include its addition as a soil amendment (using gypsum as a high-calcium fertilizer or as a method for treating high soil pH), neutralizing the high pH levels caused by road salt applications, odor treatment and concrete setting agent. The majority of this waste is from new construction cut-offs (about 6 million tons). Currently, more than 3 million tons[2] of gypsum are used as soil amendments annually and another 4 million tons[2] are used as concrete setting agents.



Many acoustical ceiling panels are made from mineral wool, gypsum and smaller amounts of paper and starch, as well as other miscellaneous materials. The mineral wool is made from slag, a by-product of steel manufacturing that consists of calcium silicate and other impurities.

Acoustical Ceiling Panels

Many acoustical ceiling panels are made from mineral wool, gypsum and smaller amounts of paper and starch, as well as other miscellaneous materials. The recycled content in ceiling panels varies significantly, depending on the product type, manufacturing process and plant location. Check the manufacturer's literature to determine the recycled content of the specific panel.

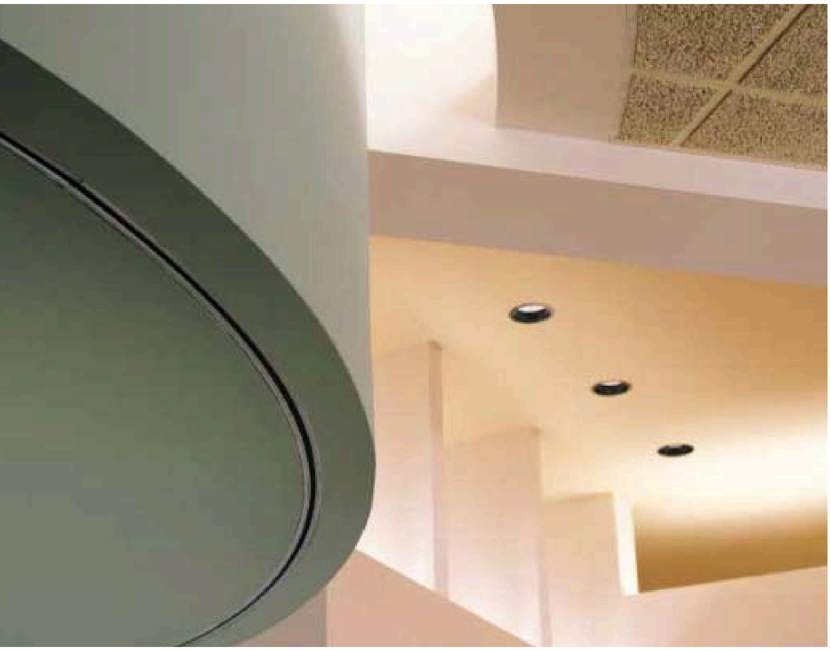
The mineral wool used in ceiling panels is made from slag, a by-product of steel manufacturing that consists of calcium silicate and other impurities. The slag is melted in coke-fired cupolas or electric melters and spun into fibers that are incorporated into the ceiling panel production process. The use of slag reduces the need to mine naturally occurring materials such as basalt rock (this also reduces its embodied energy). It also decreases landfill waste (16 million cubic feet per year).

A high percentage of the paper used in the manufacturing process is recycled pre-consumer (cuttings from cardboard box manufacturing) and post-consumer (newspapers) content. The starches used as binders in the manufacturing process are renewable agricultural resources. Like gypsum board manufacturing, acoustical ceiling production is a low-waste process. Panels that are chipped or broken during manufacturing are recycled and returned to the process (manufacturing efficiencies are 85 percent).

In addition, these panels have high acoustical performance and light reflections. They can enhance the positive effect on the occupants of your design solution. Acoustical ceiling panels can be recycled into new ceiling panels if they have not been contaminated or painted. However, shipping distances need to be evaluated in terms of their impact on embodied energy.

Gypsum Fiber Panels

The gypsum fiber manufacturing process combines gypsum and cellulose paper fibers to create a variety of newly introduced high-performance panels, including interior wall panels, floor underlayments and exterior sheathings. These products are made from 95 percent recycled materials. Specifically, 85 percent of the content in these panels comes from recaptured gypsum and 10 percent is from post-consumer recycled paper fiber.



Gypsum is the primary raw material used to make gypsum panels, which score extremely high on nearly all sustainable design criteria. Most of the remaining materials in gypsum board consist of paper and corn or wheat starch binders.

The panels offer an excellent sustainable alternative to other wood-based panels, most notably lauan, which is harvested from endangered, old-growth forests.

The embodied energy[3] of these panels (5 MJ/kg) is slightly higher than that of paper-faced drywall (3.6 MJ/kg), with most of the increase resulting from shipment of the panel to market. Because these panels are relatively new to the industry, they are manufactured in limited locations and then shipped to various markets.

The recycling of these panels would be similar to that of conventional gypsum panels.

Cement Board Panels

Cement board, a water-durable, multiuse panel commonly used as a backer for ceramic tile, is made from approximately 20 percent recycled materials (fly ash). Fly ash is another waste stream material from power plant emission control processes that features cement-like properties. It is produced by electrical power companies in the combustion of coal and other solid fuels, and is subsequently purchased by concrete and cement board producers for use as an aggregate.

All products impact the environment, and the key is to reduce this impact as a goal of sustainable design. It is very important to look at the cumulative effect a material and its constituent components or processes may have on the environment, both currently and in the future.

For instance, does the material need a finish requiring solvents and adhesives? Will it need to be cleaned or maintained by using toxic chemicals? Or does the material trap dust and toxins more than an alternative material? Consider long-lasting local products that vastly reduce resource consumption, as well as other environmental impacts associated with construction and remodeling.

Green Specifications

In order to maximize the sustainable value of these – and other – building products, architects should incorporate sustainable design criteria into building specifications. Proper specification details ensure that the benefits inherent in green products are supported during the construction process and fully realized throughout the building's life cycle.

The first step in creating an effective green specification is to use a standard specification layout, such as MasterFormat™ from the Construction Specifications Institute. MasterFormat divides specifications into three categories:

- PART 1: ***General:*** *Describes general procedures and administration.*
- PART 2: ***Products:*** *Describes materials, products, equipment and systems.*
- PART 3: ***Execution:*** *Describes the proper procedures for the installation of specific products and systems into designed applications.*

The three-section format provides architects with a structure to add detailed notes and complete explanations of the environmental requirements expected for each project. There's no need to include additional sections, as this may only confuse contractors and building owners who are already familiar with the MasterFormat structure.

When creating environmental specifications, make sure to define your terms. Don't assume that users of the specification will know the exact meaning of recyclability, post-industrial materials or other environmental terms.

Also consider including the following general criteria in your specifications as needed to meet the sustainable objectives of a specific project:

- Outline on-site product storage procedures. Given the fact that standing water is a common occurrence on many construction sites, materials should not be stacked on the ground and cartons should not be left opened and exposed to weather.
- Detail appropriate methods for storing and discarding construction waste that cannot be eliminated. Conduct a pre-construction meeting with appropriate contractors to discuss methods for minimizing construction waste and disposal and to explore alternative reuse options.
- Encourage the establishment of good construction practices. Realistic construction schedules will enable contractors to fully enclose buildings to minimize moisture penetration that may contribute to poor product and system performance.

Sustainable Walls, Ceilings and Substrates

Do *not* include descriptions of a project's environmental goals in the specification, such as attaining a LEED (Leadership in Energy and Environmental Design) rating in the specification. Rather, include this information as part of your instructions to bidders. As stated previously, the selection of green products is only a small part of sustainability.

For a more encompassing guideline, review ASTM E2129 (*Standard Practice for Data Collection for Sustainability Assessment of Building Products*) from the American Society for Testing and Materials and compare manufacturers' responses and backup documentation to this tool.

Note that ASTM E2129 is not a pass/fail standard, but rather a guideline by which to evaluate manufacturers' commitments to sustainability. Manufacturers should provide detailed explanations for each ASTM E2129 response, rather than just a simple "yes" answer to each question. While architects can reference ASTM E2129, they cannot require compliance to it because it is only a guideline rather than a strict standard.

Last but not least, remember the *reduce, recycle* and *renew* principles discussed previously when selecting products to include in the specification. Bear in mind, however, that effective green product selection requires a careful analysis of a wide range of factors. A product with low embodied energy, high recycled content or other obvious environmental benefits is usually a solid choice for sustainable design.

In the end, well-researched green product selections, combined with intelligent sustainable specifications, offer architects a practical and effective solution for helping conserve our natural resources, while meeting a growing demand for environmentally friendly design and construction practices.

References:

[1] AtlaNews, *Embodied Energy in New Zealand Materials,* by Andrew Alcorn

[2] U.S. Geological Survey, *Mineral Commodity Summaries,* by Donald W. Olson

[3] The Athena Sustainable Materials Institute, *Life Cycle Analysis of Gypsum Board and Associated Finishing Products,* by George J. Venta

CLICK FOR ADDITIONAL REQUIRED READING

The article continues online at: **archrecord.construction.com/resources/conteduc/archives/0409usg-1.asp**. To receive AIA/CES credit, you are required to read this additional text. For a faxed copy of the material, contact USG at (800) USG-4YOU. The following quiz questions include information from this material.

AIA/ARCHITECTURAL RECORD **CONTINUING EDUCATION** Series

LEARNING OBJECTIVES

- *Better judge the sustainability of materials*
- *Specify "green"*
- *Understand and apply the concept of "embodied energy"*

INSTRUCTIONS

Refer to the learning objectives above. Complete the questions below. Go to the self-report form on page 230. Follow the reporting instructions, answer the test questions and submit the form. Or use the Continuing Education self-report form on *Record's* website — *archrecord.construction.com* — to receive one AIA/CES Learning Unit including one hour of health safety welfare credit.

QUESTIONS

1. The amount of non-renewable energy required to extract, manufacture, transport and construct building products is termed:
- **a.** embodied energy
- **b.** synergystic energy
- **c.** transformation coefficient
- **d.** utility

2. A high-embodied energy product may provide significant energy savings over the life of a building.
- **a.** true
- **b.** false

3. "Recaptured" gypsum accounts for what current percentage of the overall gypsum needs of the U.S. construction industry?
- **a.** 15
- **b.** 25
- **c.** 43
- **d.** 72

4. Wallboard manufactured from recaptured gypsum is distinguished from "natural" gypsum board by its slightly green tint.
- **a.** true
- **b.** false

5. It is important to include a project's environmental goals in the specification.
- **a.** true
- **b.** false

6. Which of the following characteristics do not generally make a material a solid choice for sustainable design?
- **a.** high recycled content
- **b.** high embodied energy
- **c.** low embodied energy

7. It is estimated that ___ million tons of construction and demolition drywall waste is generated each year.
- **a.** 4
- **b.** 8
- **c.** 14
- **d.** 23

8. Drywall waste can be recycled as a soil amendment, as a concrete-setting agent and in the manufacture of cosmetics.
- **a.** true
- **b.** false

9. Gypsum and cellulose paper fibers can be combined to create high-performance products for all but which of the following applications?
- **a.** shingles with asphalt-like characteristics
- **b.** exterior sheathing
- **c.** floor underlayment
- **d.** interior wall panels

10. Cement board can contain 20 percent recycled content due primarily to the addition of:
- **a.** calcium sulfate
- **b.** calcium silicate
- **c.** fly ash
- **d.** polymers

About USG

USG Corporation is a Fortune 500 company with subsidiaries that are market leaders in their key product groups: gypsum wallboard, joint compound and related gypsum products; cement board; gypsum fiber panels; ceiling panels and grid; and building products distribution.

United States Gypsum Company, a subsidiary of USG Corporation, is the nation's leading manufacturer of gypsum board panels and the largest user of recaptured gypsum. The company uses more than 2.8 million tons of recaptured gypsum annually in the production of its SHEETROCK® Brand Gypsum Panels. Overall, the panels contain an average of 36 percent recycled content – 5 percent post-consumer waste and 31 percent post-industrial waste.

The company also manufactures FIBEROCK® Brand AQUA-TOUGH™ Interior Panels, FIBEROCK Brand AQUA-TOUGH Sheathing and FIBEROCK Brand AQUA-TOUGH Underlayment, all of which are made from a gypsum fiber manufacturing process that utilizes 95 percent recycled materials. These products have also earned the Green Cross certificate from Scientific Certification Systems for their high recycled content. The panels offer an excellent sustainable alternative to wood-based panels, most notably lauan, which is harvested from endangered, old-growth forests.

USG Interiors, Inc., another subsidiary of USG Corporation, is the only manufacturer to offer a limited lifetime warranty against mold growth on acoustical ceiling panels. The warranty is available on the company's ECLIPSE™ CLIMAPLUS™ and ASTRO™ CLIMAPLUS Ceiling Panels, both of which are treated with the proprietary AEGIS Microbe Shield™.

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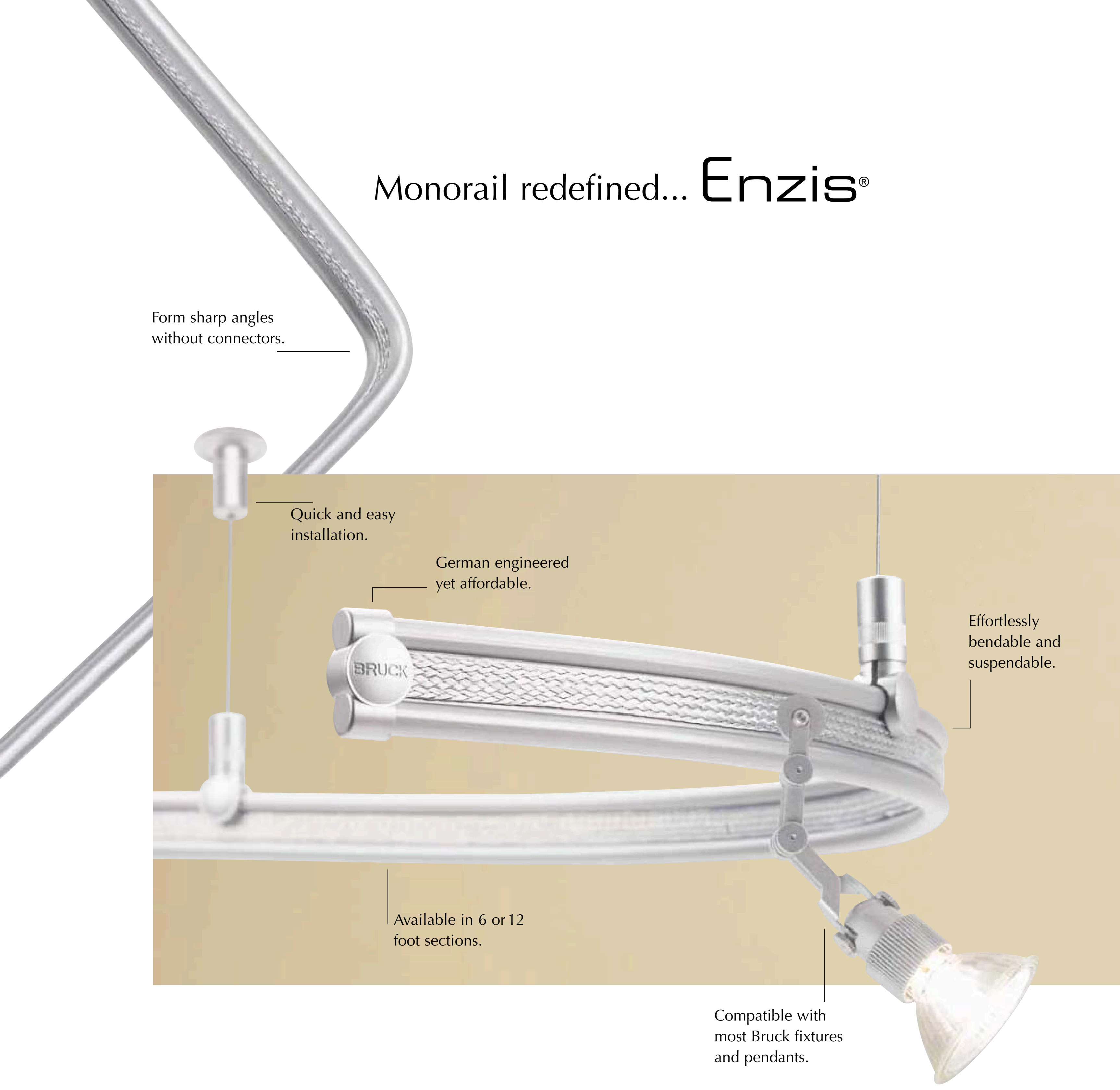

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Products Walls & Ceilings

Wall and ceiling manufacturers continue to develop products that improve acoustics, mold and mildew resistance, and design flexibility, while furthering the ongoing effort to be sustainable. The following roundup includes a **"breathable" wall covering** and the latest 3D ceiling panel. *Rita F. Catinella*

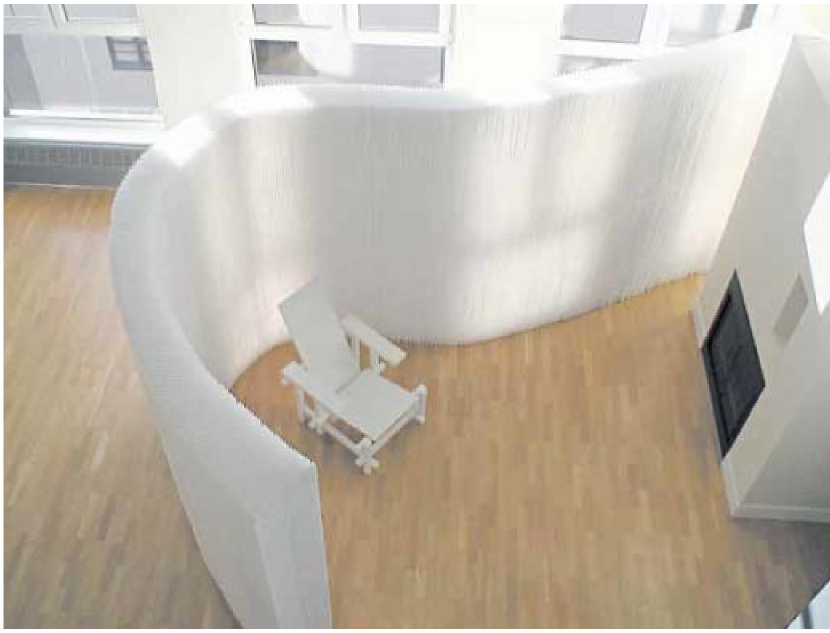
Flexible textile walls expand and compress to create rooms-within-a-room

Soft Wall is a flexible partition prefabricated from 600 thin layers of a soft, translucent, nonwoven textile. The product is currently in development by molo design, the product design firm founded by Canadian architects Stephanie Forsythe and Todd MacAllen, whose architectural endeavors include a $110 million public space project in Aomori, Japan.

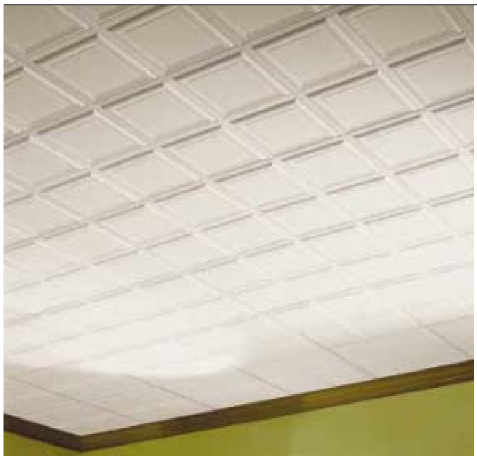
Soft Wall's expandable honeycomb structure optimizes the textile's acoustic-dampening properties, can transmit or absorb light, is compressible for storage and transport, and allows the walls to open, curve, or fold away when not in use. The wall measures a mere inch in length when compressed and extends to lengths of 20' or more when expanded.

Another concept from molo design is the Soft House, a housing system that utilizes the same honeycomb structure and applies it to an enclosed room. Intended to provide a flexible relationship between the private and public spaces of the home, the structure allows rooms and walls to open in a variety of ways or completely fold away when not in use.

Working closely with a nonwoven-textile manufacturer and honeycomb fabricators, the architects are designing the material for both Soft Wall and Soft House to be flame-, U.V.-, and chemical-resistant, as well as 100 percent recyclable and made with recycled content. The studio hopes to have a 4' and 6' version of the wall available in spring 2005. molo design, Vancouver. www.molodesign.com **CIRCLE 200**



The Soft Wall (above) can create a flexible private space within a larger room.



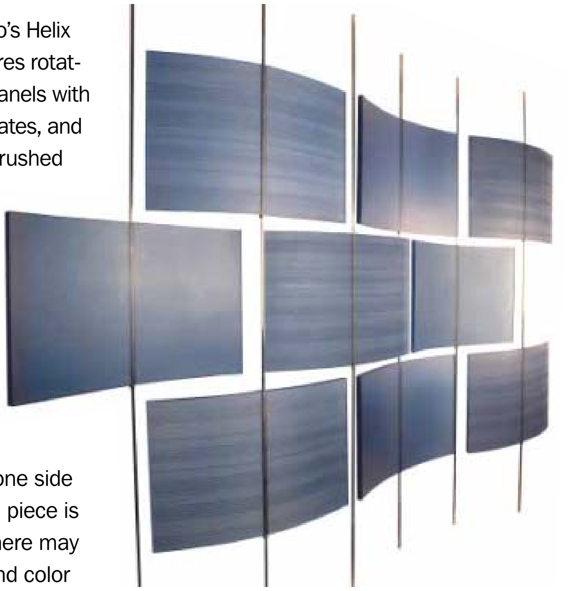
Embossed-plaster-style ceiling helps hide the grid

Ledges, a new suspended ceiling from Armstrong, provides architects with the 3D look and clean, smooth finish of embossed plaster at a fraction of the cost. The ceiling's design, reminiscent of Old World raised-panel woodwork, adds dimension and architectural detailing to spaces ranging from building lobbies and corridors to hospitality and retail settings. The panel's distinctive repeating pattern also helps hide the grid system while still providing the accessibility of a suspended ceiling.

The 24" x 24" panels have a square edge detail and install easily in an Armstrong Prelude $\frac{15}{16}$" suspension system. Ledges ceiling panels carry a Class A UL Flame Spread rating and have a Light Reflectance value of .80, meaning they reflect 80 percent of the light that strikes them to help them brighten a space. Armstrong World Industries, Lancaster, Pa. www.armstrong.com **CIRCLE 201**

Hand-cast-resin rotating partition wall

Working with poured cast resin as a base material, the L.A.-based firm em [collaborative studio] offers a range of products, including lighting, tables, chairs, and accessories. The studio's Helix 3D partition wall features rotating translucent resin panels with stainless-steel rods, plates, and collars in a mirror or brushed finish. Each 24" high x 36" long panel is separated from the next by a 3" space. The wall system shown here features mixed surface treatments, including all frosted and one side frosted/one side patterned. Since each piece is produced manually, there may be slight dimension and color variations from piece to piece. em [collaborative studio], Los Angeles. www.emcollection.com **CIRCLE 202**



Products Walls & Ceilings

◄ Breathable wall covering

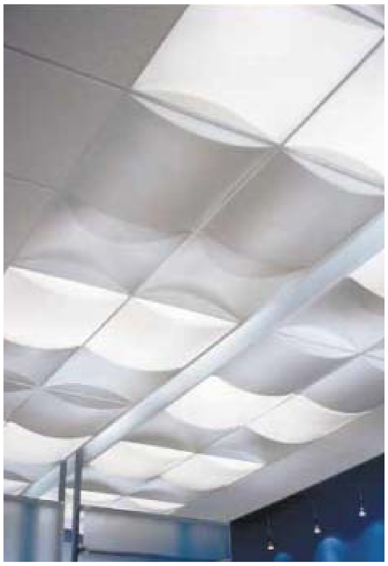
In response to increasing mold and mildew concerns in the A&D community, Omnova Solutions has introduced the "brease" woven-vinyl wall covering, made of approximately 60 percent less vinyl than traditional commercial wall coverings. The construction of the breathable wall covering provides higher perm ratings for greater moisture permeability. Brease is ideal for health-care, hospitality, and education markets. Omnova Solutions, Fairlawn, Ohio. www.omnova.com **CIRCLE 203**

► Sound-control ceiling

With the look and feel of real oak, cherry, or poplar, Owens Corning's QuietZone Acoustyle coffered-wood ceiling system offers the style of custom millwork with integrated sound absorption. To install, prefinished coffered-wood panels and trim pieces are incorporated into a standard metal T-rail grid mounted over a high-performance, sound-absorbing material. Acoustyle joins a range of QuietZone products available from the company. Owens Corning, Toledo. www.owenscorning.com **CIRCLE 205**

▲ Tall wall order

A massive new indoor athletic-practice facility at Brigham Young University, Provo, Utah, measures 222' x 422' and utilizes more than 40,000 square feet of Melt-Span's CF36A architectural flat wall panels. The 2"-thick panels were installed horizontally and comprise the top half of the wall area; the lower portion is constructed of concrete masonry. The exterior facing of the 22-gauge, nonprofiled, insulated panels is finished with custom color Fortress Stone, the interior facing is Mesa profiled with Polar White siliconized polyester coating. Metl-Span, Lewisville, Texas. www.metlspan.com **CIRCLE 207**



▲ Textures and shapes

USG's new Summit Climaplus Ceiling Panels (above left) feature a finely textured appearance and a surface that resists scrapes and scratches commonly caused by accessing the ceiling plenum. Available in a size of 2' x 2', the panels are nearly three times more impact-resistant than typical finely textured ceiling panels. Also new from USG are Billo 3D panels (right) that can be installed into standard suspension systems either curved upward or downward. The system consists of 2' x 2' preformed, lightweight, Lexan semitransparent infill panels. USG, Chicago. www.usg.com **CIRCLE 204**

▲ Wheat straw wall panels

To create their strawboard panels, Durra applies both high heat and extreme pressure to straw fibers, coaxing out resins that act as a permanent bonding agent. Panels are then dry-extruded and finished with a strong, water-resistant liner paper. The resulting panels are nontoxic and offer fire, impact, mold, and mildew resistance. Durra Building Systems, Whitewright, Texas. www.durra.com **CIRCLE 206**

► Stopping sound from within

Celotex's SoundStop fiberboard product is made of 97 percent recycled or recovered wood or sugarcane fibers. The product is intended to be installed along with drywall in walls and ceilings to reduce sound in single homes, multifamily buildings, and office buildings, as well as for renovations, including loft conversions of industrial buildings. Knight-Celotex, Northfield, Ill. www.aknightcompany.com **CIRCLE 208**

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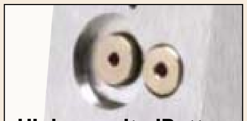

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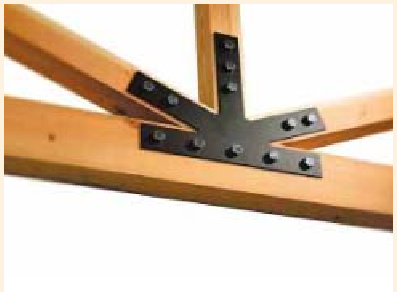
Product Briefs

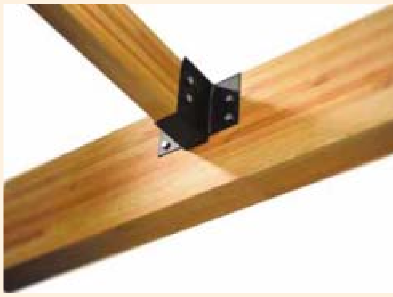
▼ Internal/external solar shading fabrics

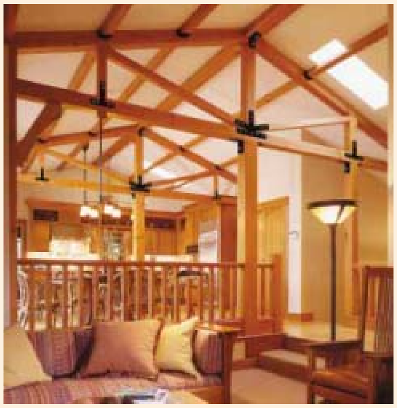
The GreenScreen line of PVC-free solar shading fabrics are designed for both internal and external contract roller shades and solar control systems. Constructed of polyurethane and a prestretched polyester core, GreenScreen is available in five levels of openness, ranging from blackout to 25 percent. The fabrics are also FR rated, meeting the strictest standards of North America and Europe. Distributed through Nysan Shading Systems, a Hunter Douglas company, GreenScreen has been installed on several recent projects, including the new headquarters of Wind NRG Partners in Vermont. Hunter Douglas Contract, Upper Saddle River, N.J. www.hunterdouglascontract.com **CIRCLE 209**

► Camouflaged flat-panel speakers

Martin Architectural's new Flat panel speakers offer top audio reproduction in a slim speaker construction that integrates seamlessly into the interior design of a space. A collection of themed designs is available, or custom designs can be created to match any concept. For true camouflaging or flush mounting, specifiers can print or paint directly onto the Flat speaker itself. Based on proprietary NXT technology, Flat speakers generate sound by vibrating a plain panel surface, resulting in audio radiating in all directions. Acoustic "dead stops" are avoided by distributing the speakers evenly throughout the room with a maximum of 33' between each panel. Applications include retail environments, bars, restaurants, lounge areas, conference rooms, and airports, among others. Martin Architectural, Sunrise, Fla. www.martinarchitectural.com **CIRCLE 211**



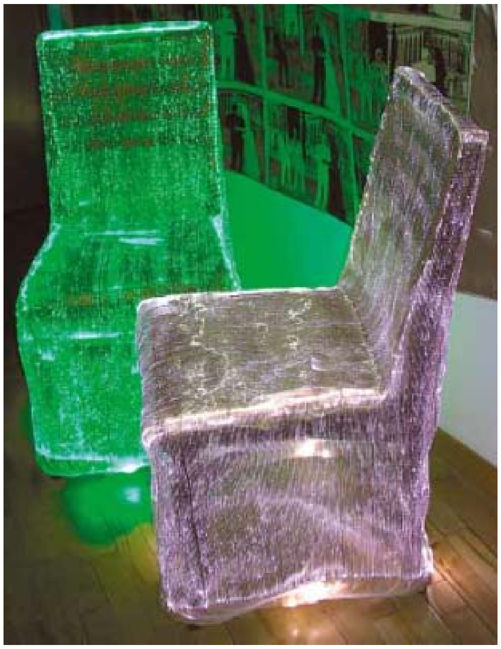




Product of the Month
Architectural Products Group

Until now, connectors for exposed beams and heavy timbers had to be custom-designed, engineered, fabricated, and finished—an expensive and time-consuming process. In response to customer requests for more design options that allow connectors to be used as architectural detailing, Simpson Strong-Tie created the Architectural Products Group for interior and exterior exposed-wood applications, including beams and heavy timbers. The Group includes strap ties, column bases, column caps, beam hangers, heavy angles, joist hangers, bearing plates, and concealed joist ties, for applications including homes, hotels and lodges, educational buildings, retail outlets, and corporate office projects. Simpson's team of engineers can provide information about installation, code requirements, and wind-resistant/seismic construction. Simpson Strong-Tie, Dublin, Calif. www.strongtie.com\apg **CIRCLE 210**

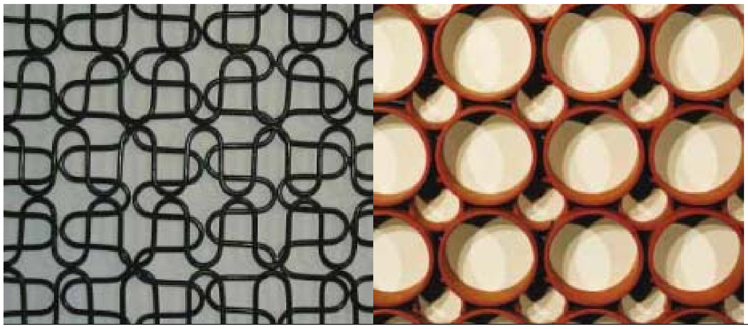
► Fabric as a light source



The result of a collaboration between an Italian high-tech company and a Swiss weaving company, Luminex fabric doesn't just glow in the dark—it's a light source in its own right. Composed of optical fiber woven with polyester, Lycra, or spandex fibers, Luminex connects to a LED light source and is activated by a battery or direct current. The distributor of the fabric hopes that integrating microchips will turn Luminex into smart material that can process signals like a heartbeat or body temperature and respond consistently to environmental stimuli. The company is working to produce a stratified glass with the fabric encased inside, and the material is already being used in interior design to illuminate curtains, panels, and fixed structures. Zuzka for Fabricology, New York City. www.zuzka.com **CIRCLE 212**

▼► Brooklyn design pride

The creativity of Brooklyn was on display at Brooklyn Designs 2004, held in the borough from April 30 through May 2. Presented by the Brooklyn Chamber of Commerce, the show featured contemporary furniture, lighting, rugs, and accessories. The strongest work at the show was from woodworking companies, including Scrapile, a collaboration of designers who reshape scraps of wood from local shops to form one-of-a-kind furniture pieces, including a colorful shelf (right). Another highlight was Aswoon's custom room dividers made of materials that include wood, plaster, and plastic (below). Aswoon, Brooklyn, N.Y. www.aswoon.com **CIRCLE 242** Scrapile, Brooklyn, N.Y. www.thefutureperfect.com **CIRCLE 213**



◄ Fire-protection doors

Cornell has expanded its line of emergency-response products to include the Firemiser insulated fire door and larger SmokeShield assemblies. One Firemiser fire door from Cornell can achieve rolling steel security, up to four hours of UL-rated fire protection, plus sound attenuation and climate/smoke control. SmokeShield assemblies feature a UL-tested smoke-sealing system available in sizes up to 34' wide x 25' high. Cornell Iron Works, Mountaintop, Pa. www.cornelliron.com **CIRCLE 214**

► One tough character

Bobrick has introduced the Sierra Series solid-color, reinforced-composite toilet partitions for the school market and other heavy-use and -abuse, vandal-prone washroom environments. ASTM testing confirms Sierra's ultra-hard GraffitiOff Surface provides complete, nonghosting graffiti removal and superior resistance to scratching, gouging, and impact. Bobrick Washroom Equipment, North Hollywood, Calif. www.bobrick.com **CIRCLE 216**

▼ Comforting windows/doors

Hurd FeelSafe windows and patio doors give homeowners along the Gulf and Atlantic coasts a storm-resistant window or patio door that meets Energy Star requirements in their area and suits their local architectural style. New Hurd FeelSafe windows and patio doors incorporate both an outside pane of impact-resistant laminated glass and an inside pane of tough tempered glass to perform in hurricane conditions and optimize strength and energy efficiency. The added strength also gives protection from intruders, reduces the harmful effects of ultraviolet rays, and blocks out more exterior noise than ordinary glass. Hurd Millwork Company, Medford, Wis. www.hurd.com **CIRCLE 215**

► High-tech plastic panels

Based in Austria, Blizzard Composite provides translucent plastic polymer with two different honeycomb core structures. A patented lamination process allows unlimited material combinations, like acrylic skins with frosted, colored, and structured surfaces bonded to polycarbonate cores. The clear-PEP and AIR-board types offer superior rigidity relative to their weight and mass and are ideal for interior and exterior cladding, canopies, flooring, and surfacing. Robin Reigi, New York City. www.robin-reigi.com **CIRCLE 217**

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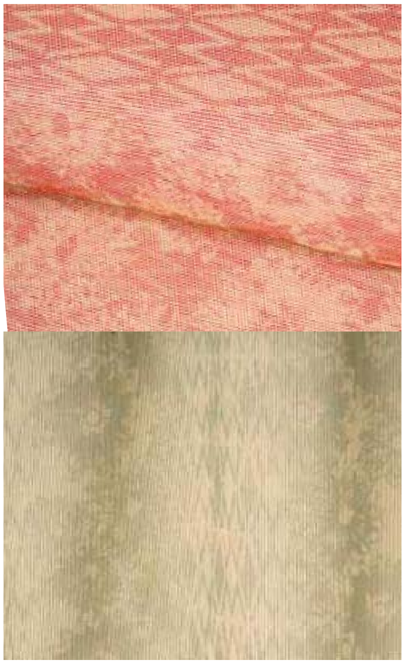
Product Briefs ICFF

Ironically, furniture wasn't the strongest category at this year's International Contemporary Furniture Fair, held mid-May in New York City. It was the innovative textiles, carpets, and finishes that really stole the show. *R.F.C.*



◄ Animated fabric

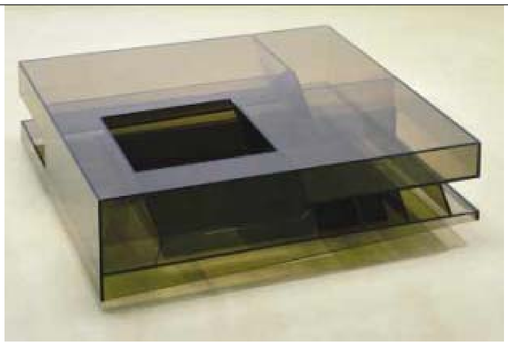
Miglus Design was honored with the Editors Award for Textiles at the show (where RECORD had a place on the jury for the first time) for an unusual woven fabric that shifts design depending on the angle from which it is viewed. Wanda Miglus, founder of Miglus Design and creator of the fabric, describes it as "woven animation" and sees applications in a range of industries, including fashion, automotive upholstery, and designer furniture. According to Miglus, any two images of patterns can be reproduced in a wide range of fiber types, using a normal jacquard loom. Miglus Design, Providence. www.miglusdesign.com **CIRCLE 218**

◄▼ Look at it from another angle

Blink lenticular cabinetry, from Douglas Homer, incorporates a lenticular laminate that shifts from one image to the next as the viewing angle changes. Following last year's introduction of three Blink prototypes, this year the company introduced full production models as well as BlinkSlides, a softer, rounded-edge, sliding-door cabinet, and BlinkStacks, a stackable storage unit with a touch-latch door. Shown here is the "Nothing's On" transition image applied to the "C" model cabinet. Douglas Homer, Downington, Pa. www.douglashomer.com **CIRCLE 219**

► Unified by gender and a love of design

Collections designed exclusively by women were a trend this year, with single-gender collections emerging at both ICFF and NeoCon (see page 216). Wonder Women, a group of furnishings created for Dune's 2004 Collection, was presented off-site during the show. Pieces include work from a broad spectrum of designers, including Eva Zeisel, Matali Crasset, Winka Dubbeldam, and Yeon Soo Son. Dubbeldam's tinted-acrylic Cumulus coffee table and Crasset's colorful, translucent-resin Chiara chairs are shown here. Dune, New York City. www.dune-ny.com **CIRCLE 220**



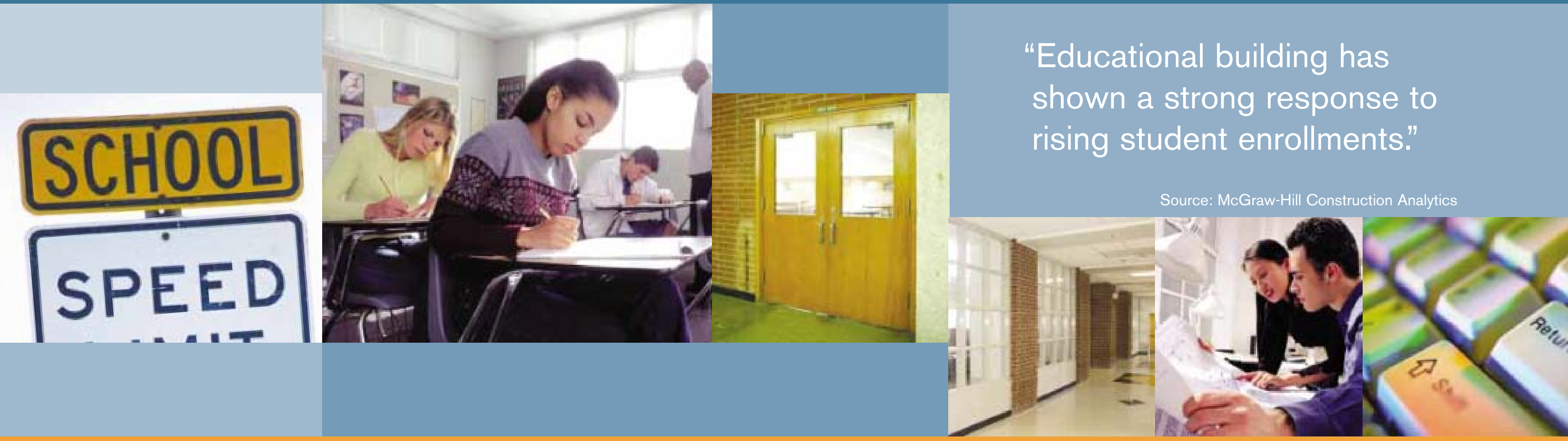
▲ Three-dimensional rugs

The Spanish rug company Nanimarquina displayed striking area rugs at the show and was given a top award in the category of Carpet and Flooring for its efforts. Topissimo, designed by the company's namesake, Nani Marquina, is made of 100 percent hand-tufted wool and is guaranteed to be child-labor-free. The rug is practically flat, while featuring voluminous polka dots that are available either multicolored or in two tones of the same color. The Terence Conran Shop, New York City. www.nanimarquina.com **CIRCLE 222**

▼ Scouting for new talent

Designtex became intrigued with the upstart design studio twenty2 at last year's fair, when it introduced an outstanding collection of hand-screened wallpaper. This year, Designtex launched an award-winning collection created by the design studio, including nine wall coverings, three upholstery patterns, and three drapery patterns for hospitality, corporate, or residential applications. Designtex, New York City. www.dtex.com **CIRCLE 221**

What's the fastest way to get your share of the $42 billion education construction market?



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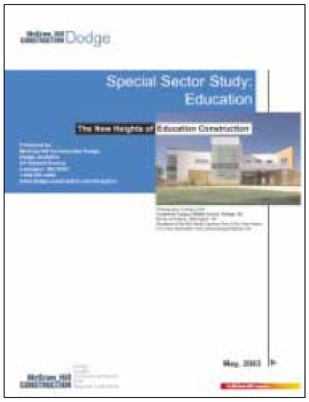

Dodge

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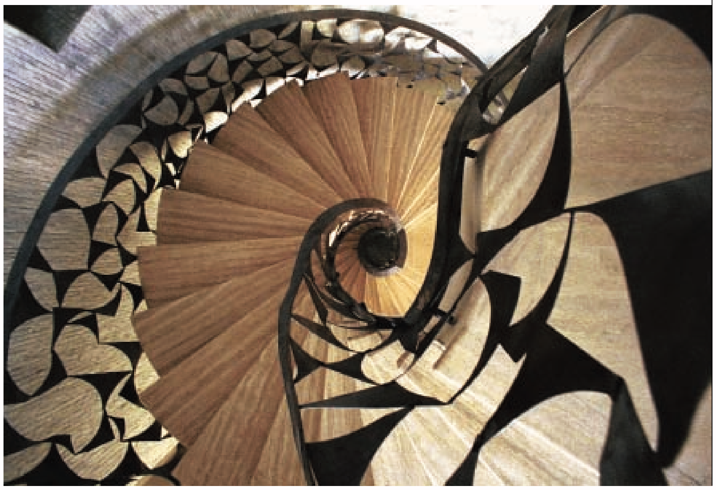
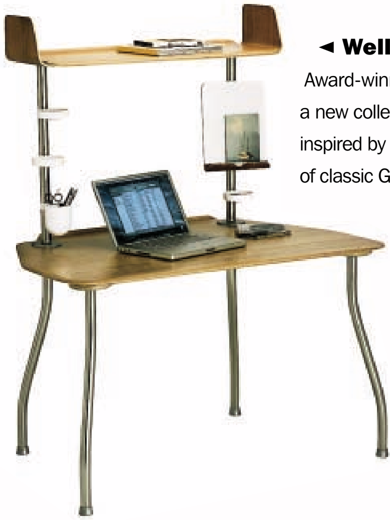
▼ Functional sculptures

Trained in Venezuela, Leonor Mendoza has been working as a sculptor since 1990. Among her clients are the Muci Gallery in Caracas and the Art Museum of the Americas in Washington, D.C. Aside from exhibiting her work, she has been commissioned by private collectors to create original work. Mendoza has designed and built architectural pieces such as doors, handrails (below), windows, screens, and room dividers, as well as functional chairs, lamps, and coffee and dining tables. Leonor Mendoza, Brooklyn, N.Y. www.leonormendoza.com **CIRCLE 223**



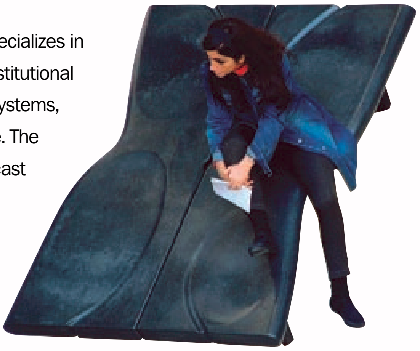


◄ Well played

Award-winning designer Richard Holbrook debuted a new collection of home/office furniture at the fair inspired by the look, lightweight design, and strength of classic Gibson guitars. The first item, Lucy, is a compact desk with an overhead shelf and coordinated work tools (left). The products are based on a new "hollow-body" tabletop construction that creates a lightweight, rigid structure by fusing a thin, contoured, multi-ply top skin with a peripheral frame and bottom skin. Richard Holbrook, Pasadena, Calif. www.richardholbrook.com **CIRCLE 224**

► Landscaped furniture

Based in Buenos Aires, Estudio Cabeza specializes in the design and production of urban and institutional equipment, including modular laboratory systems, precast ramp systems, and street furniture. The Topográphico bench (right) is made of precast concrete with a black color aggregate. The bench features a natural finish and a sinuous surface that evokes subtle ergonomic qualities. Estudio Cabeza, Buenos Aires. www.estudiocabeza.com **CIRCLE 225**



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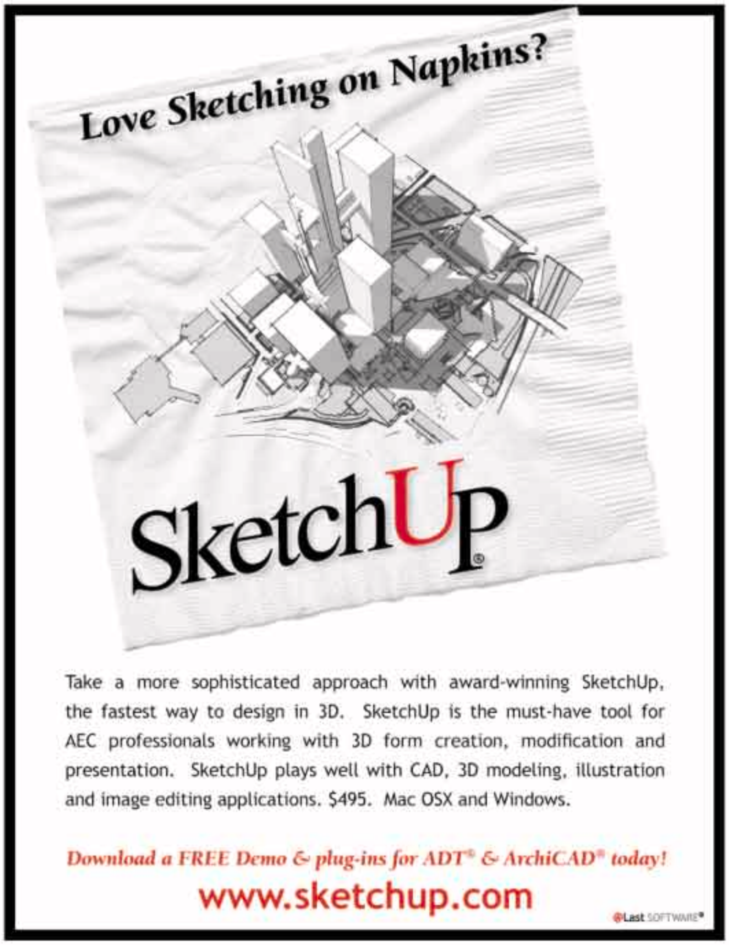

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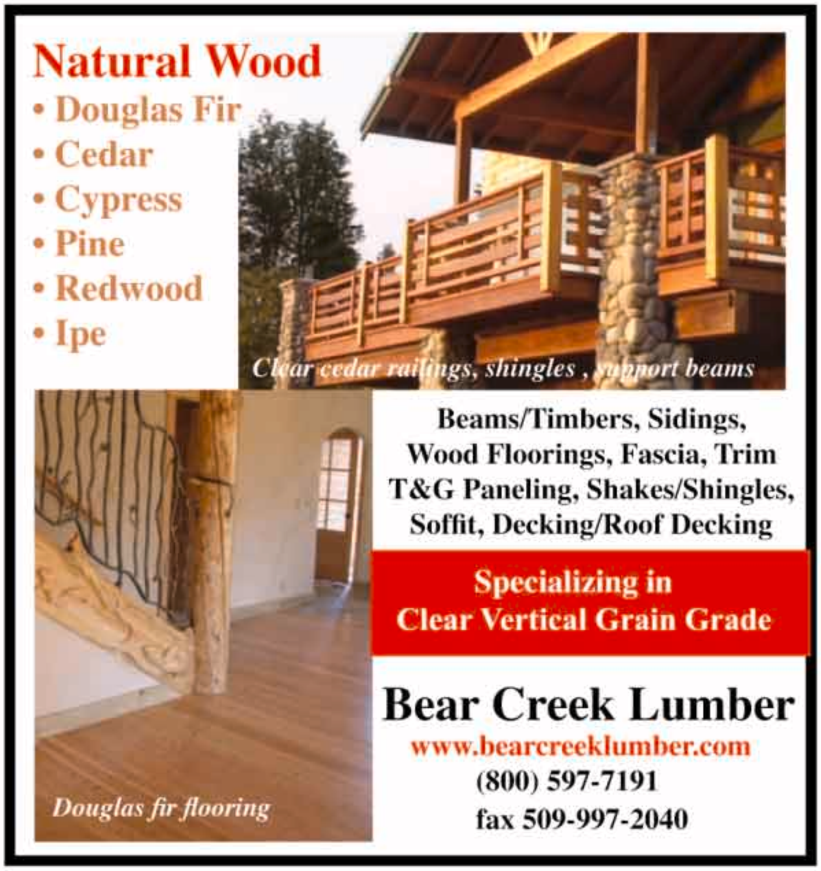

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Product Briefs NeoCon

NeoCon, the contract furnishing industry's premier event, attracted over 40,000 attendees in Chicago last June. A brief selection of the newest products and showrooms introduced at this year's show follows. *R.F.C*

► Keeping a good thing going

For the second year in a row, The Mohawk Group enlisted architect Shashi Caan to design its Merchandise Mart showroom to help galvanize its image, given the individual brand identities of five distinct operations—Karastan Contract, Durkan Commercial, Durkan Patterned Carpet, Mohawk Commercial, and Bigelow Commercial. A distinct feature of the space is a storage area that extends 48' down the length of the showroom and rises 7' high, which is masked by a wall that features the artwork of James Toro "carved" into a block of backlit Dupont Corian. For 2005, Caan has been tapped to develop a collection for the Karastan Contract division of the company. Mohawk Group, Atlanta. www.mohawkgroup.com **CIRCLE 226**

▼ New brand, philosophy, and showroom

Designed by Perkins & Will/Eva Maddox Branded Environments, Haworth's new showroom launched a new design philosophy that takes a holistic approach to the work space and addresses performance through the concepts of "Work" and "Restore." A Restore Pavilion features a reflecting pool built into the raised flooring, while a Work Pavilion incorporates "Glow Walls" that offer artificial daylight and flooring used for communication. Haworth has applied for gold-level certification in the USGBC's LEED-CI pilot program. Haworth, Holland, Mich. www.haworth.com **CIRCLE 227**

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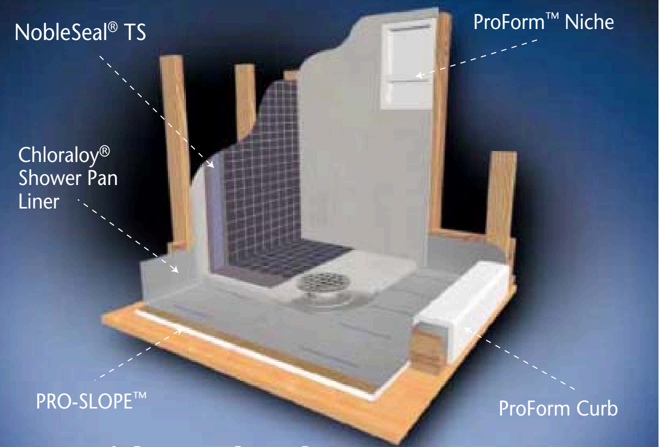

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Rakks wall-mounted shelving at Christine Desirée Collection, Sarasota, FL Interior Design: Christine Desirée

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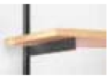
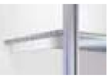
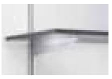
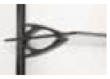

Rakks Bracket


Rakks on Pole


Universal Bracket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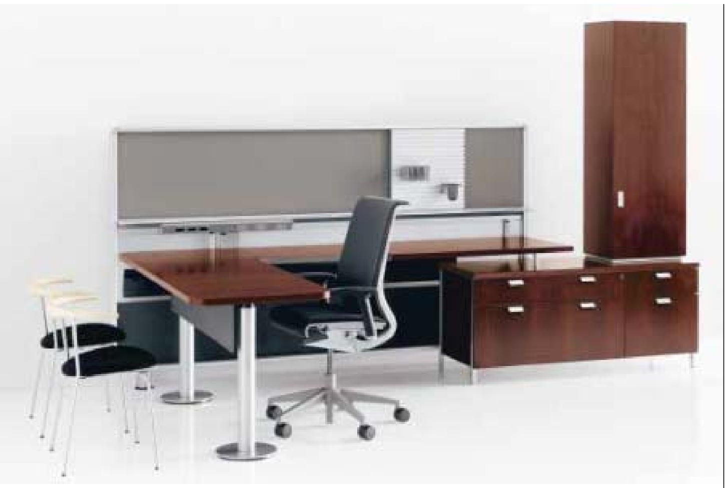
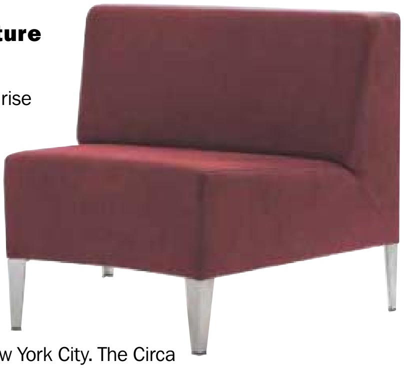


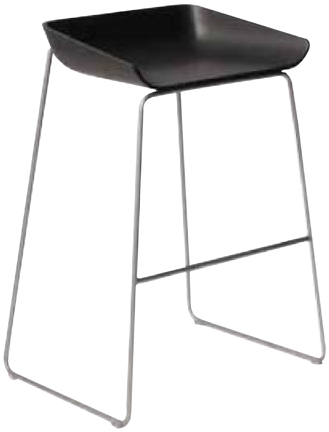
▲ One flexible office worker

Awarded Best of Competition in this year's Best of NeoCon competition, Topo's "flex-fit" walls feature unlimited adjustment within an 18" range to increase or decrease worksetting size without additional components. Work surfaces flex-to-fit 18" laterally and 3" vertically to accommodate changing footprints, human scale, and individual preferences. As an added bonus, users may open or close their work space with sliding window screens between desks and roller screens between workstations to facilitate collaboration or concentration. Metro, Oakland, Calif. www.metrofurniture.com **CIRCLE 228**

► Female designs on furniture



According to Brayton, the 3 Women Collection is a direct reflection of the rise of talented women in design and architecture. The collection includes designs by Laurinda Spear, FAIA, founding principal of Arquitectonica; Pamela Light, a senior vice president at HOK in L.A.; and Alison Spear, AIA, a principal of her own firms in Miami and New York City. The Circa modular lounge (right) was designed by Alison Spear for the collection along with a ganging table. Brayton, High Point, N.C. www.brayton.com **CIRCLE 229**



◄ Have a seat, get the scoop

One of the design goals for Turnstone's Scoop Stool was to avoid competing with the architecture of the space. Inspired by a grain scoop, the casual stool is intended for café areas, break rooms, corporate cafeterias, and other gathering spaces. The stool meets all ANSI/BIFMA standards and features a durable plastic seat and a wire rod frame available in platinum or black powder-coat paint. Turnstone, Caledonia, Mich. www.turnstonefurniture.com **CIRCLE 230**

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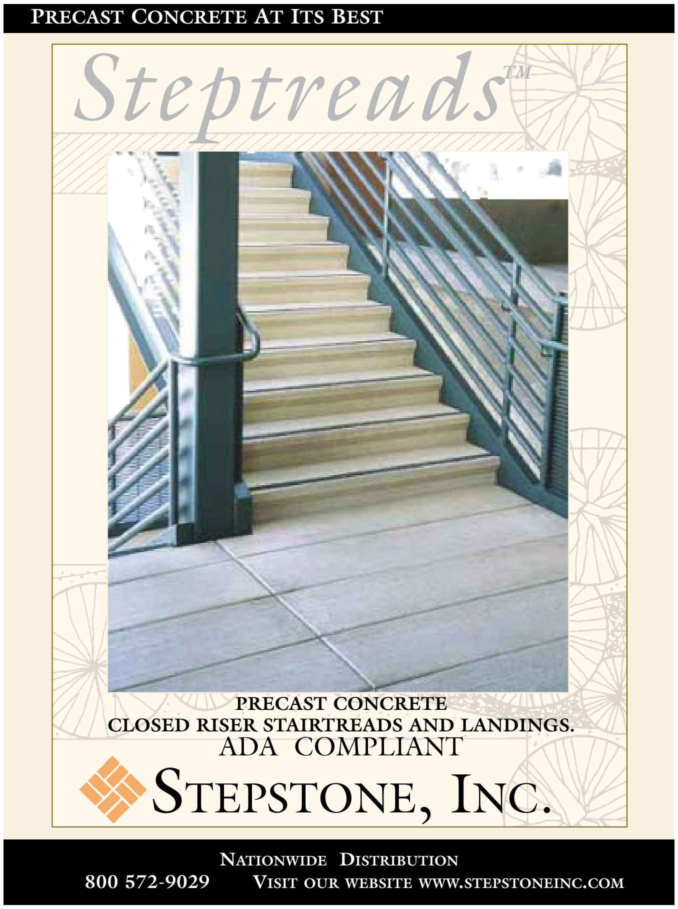

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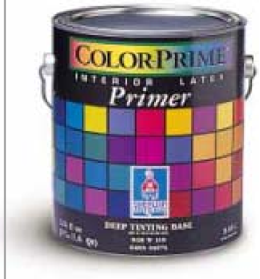

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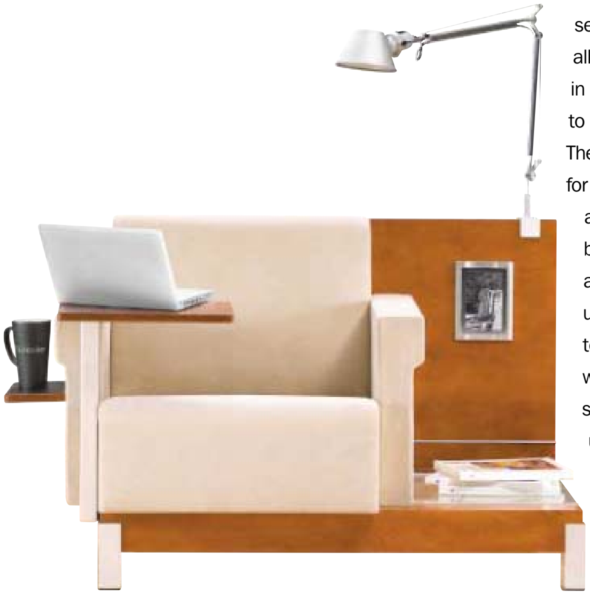
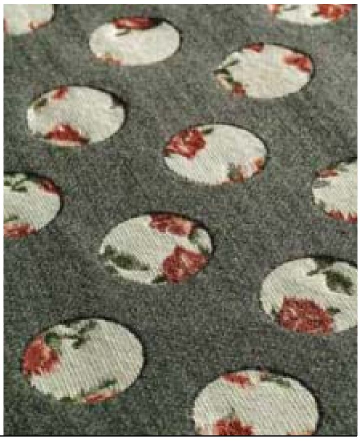


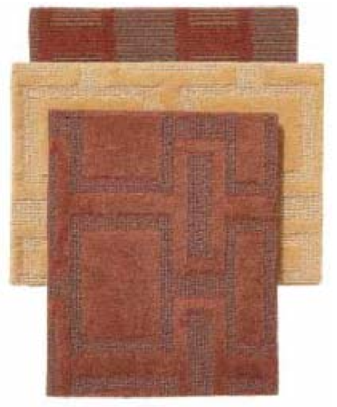
▲ Flexible lounge seating

The Sojourn lounge seating group from Gunlocke can serve as a place for waiting, relaxing, meeting, or working. The addition of a low side table topped by a seat-high back wood wall allows the seat to be used in the middle of the room to enclose or divide space. The addition of a tablet arm for writing or a laptop, with an accessory tray for beverages, cell phones, and pencils, allows the unit to become a place to work. Pairs of solid wood rails serve as structure to support the upper soft seating elements, arms, and walls. Accessories, such as lamps, coat hooks, and magazine racks, clamp either to these rails or to the top of the walls, and glass or wood panels drop between the rails, in place of seats or at the ends, to form tables. Gunlocke, Wayland, N.Y. www.gunlocke.com **CIRCLE 231**

► Peek-a-boo pattern

Italian architect and product designer Emanuela Frattini Magnusson, AIA, created the Askew Collection of 10 upholstery fabrics for HBF Textiles, with gray as the unifying color. The signature pattern, Hint (right), offers a layered effect with a screen of cutout circles. Peeking through the cutouts is a ground of traditional design elements, such as a red rose pattern. HBF Textiles, Hickory, N.C. www.hbftextiles.com **CIRCLE 232**





◄ Studious carpeting

The Robert A.M. Stern Library collection, designed by Robert A.M. Stern Architects, was one of the new collections introduced by Bentley Prince Street during the show. Consisting of four coordinating patterns ranging from large scale to small, the collection includes a plush cut-and-loop as well as tip shears. Pictured (left) is Reynolds in two colorways and Forsyth. Bentley Prince Street, City of Industry, Calif. www.bentleyprincestreet.com **CIRCLE 233**

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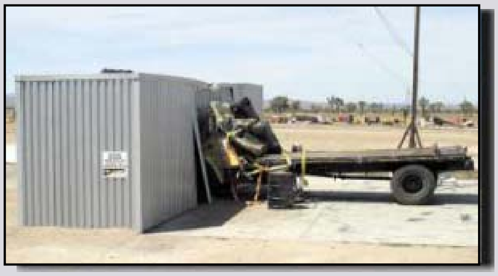

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Projects substantially completed by December 31, 2004 are eligible. One residential and one nonresidential project will be selected as winners. Top awards include $3,000 for each winning project team. In addition, all qualified entries will be displayed on the Gypsum Association's Web site.

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Window and patio doors

Crestline Windows & Doors now offers a full-line catalog for the Crestline Select series of clad and primed wood windows and patio doors. This 116-page catalog highlights product details, with options and accessories, along with sizing and technical data. Crestline Select includes double-hung, casement/awning, gliding, bow-and-bay, and specialty-shaped and -sized windows, as well as sliding and hinged patio doors. Crestline Windows & Doors, Huntington, W. Va. www.crestlinewindows.com **CIRCLE 234**

Designer shower brochure

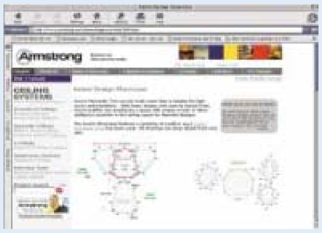
Hansgrohe has released *Showerpower*, a new, 28-page brochure that details the company's full line of high-end designer shower products. Using color photographs and "3D" drawings, *Showerpower* describes the technologies that distinguish Hansgrohe hand showers, showerheads, wall bars, and accessories. Hansgrohe, Alpharetta, Ga. www.hansgrohe-usa.com **CIRCLE 235**

Stainless-steel selection

Three new case studies illustrate appropriate stainless-steel selection in corrosive marine environments. The case studies feature common architectural outdoor applications in Hong Kong, Singapore, and the Canary Islands. Part of a case-study series published by the International Molybdenum Association (IMOA), these studies are based on the recently developed Site and Design Evaluation System. A computer program of the Evaluation System is also available from IMOA's Web site. IMOA, London. www.imoa.info. **CIRCLE 236**

NEW SITES FOR CYBERSURFING

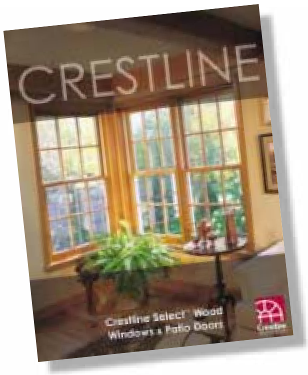
Armstrong's Axion Design Showcase allows visitors to view shop drawings depicting various ways Axiom Perimeter



Trim can help create a signature space. **www.armstrong.com/axiom**

A free site that helps companies understand the business case for green building. **www.GreenBuildings.com**

Redesigned lighting-control site includes a new "for the trade section" for architects. **www.lutron.com**



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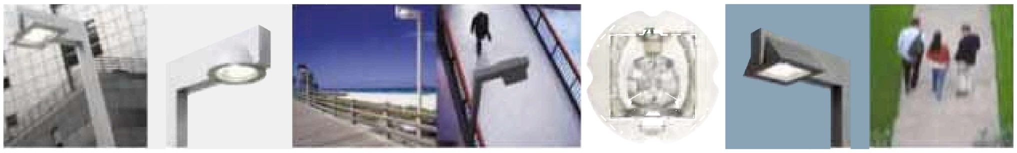

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III TILE OF SPAIN AWARDS OF ARCHITECTURE AND INTERIOR DESIGN

ASCER (the Ceramic Tile Manufacturers' Association of Spain), has called for entries for the third **Tile of Spain Awards of Architecture and Interior Design.** The competition was created to increase awareness among the architectural and design community of the multiple applications and benefits of ceramic and porcelain tiles produced in Spain.

TWO CATEGORIES: ARCHITECTURE & INTERIOR DESIGN.

The jury is presided over this year by the renowned Spanish architect Patxi Mangado.
This third year of the Tile of Spain Awards the competition consists of two categories: **Architecture** and **Interior Design**.

_ **Architecture.** It's open to new buildings, improvement or restoration of existing buildings, urban development and landscaping projects. Prize: 15.000 €.

_ **Interior Design.** Covers decoration of interior spaces in new buildings or as part of restoration and renovation projects, and also settings created for a short term duration (ephemeral spaces). Prize: 15.000 €.

The competition is open to all professional architects, decorators and interior designers of all nationalities.

Work submitted must make substantial use of Spanish ceramic floor and/or wall tiles in the formal part of the building. Entries must be received no later than **3rd November 2004.**

For further information:

ASCER
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Camino Caminás, s/n. 12003 Castellón (Spain)
Phone: + 34 964 72 72 00 Fax:+ 34 964 72 72 12
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Product Literature

Library products line

Hale Manufacturing offers a new brochure detailing the company's line of modular library furniture at modest price points for public, corporate, school, and university libraries. Hale Manufacturing, Frankfort, N.Y. www.halebookcases.com **CIRCLE 237**

Expanded UVC catalog

Steril-Aire has published a new general products catalog showcasing its expanded line of UVC emitters for mold and microbial control, enhanced IAQ, and energy savings. The catalog describes Steril-Aire's complete line of UVC devices and accessories for commercial, health-care, food-processing, school, industrial, and residential applications. Steril-Aire, Cerritos, Calif. www.steril-aire.com **CIRCLE 238**

Hardwood flooring brochure

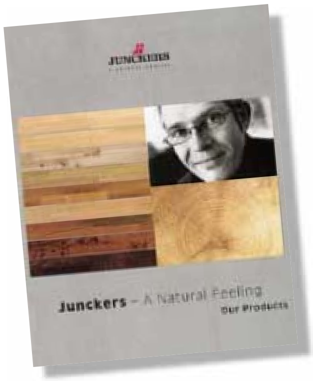
Junckers Hardwood introduces its full-color, 12-page *Our Products* brochure, which displays the solid hardwood flooring choices offered by the company. A short introduction to the firm's flooring options is followed by photographs and brief descriptions of each product's appearance, unique characteristics, finish, thickness, and style range. Junckers Hardwood, Anaheim, Calif. www.junckershardwood.com **CIRCLE 239**

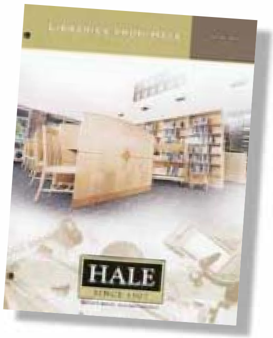
Urethane millwork catalog

The new product catalog from Style Solutions features the addition of 223 new sizes and styles of urethane millwork pieces and 227 entirely new products. The 300-page catalog is broken into six product sections and includes information on adhesives, customer service, delivery, and detailed installation instructions. Style Solutions, Archbold, Ohio. www.stylesolutionsinc.com **CIRCLE 240**

Roofing codes manual

The National Roofing Contractors Association (NRCA) has released *The NRCA Building Codes Manual, Second Edition*. The manual provides an analysis of model building code requirements applicable to U.S. roof systems and features a list of roofing-specific reference standards, analyses of building code requirements for specific roof system types, and a timely analysis of code applicability for all 50 states. NRCA, Rosemont, Ill. www.nrca.net **CIRCLE 241**





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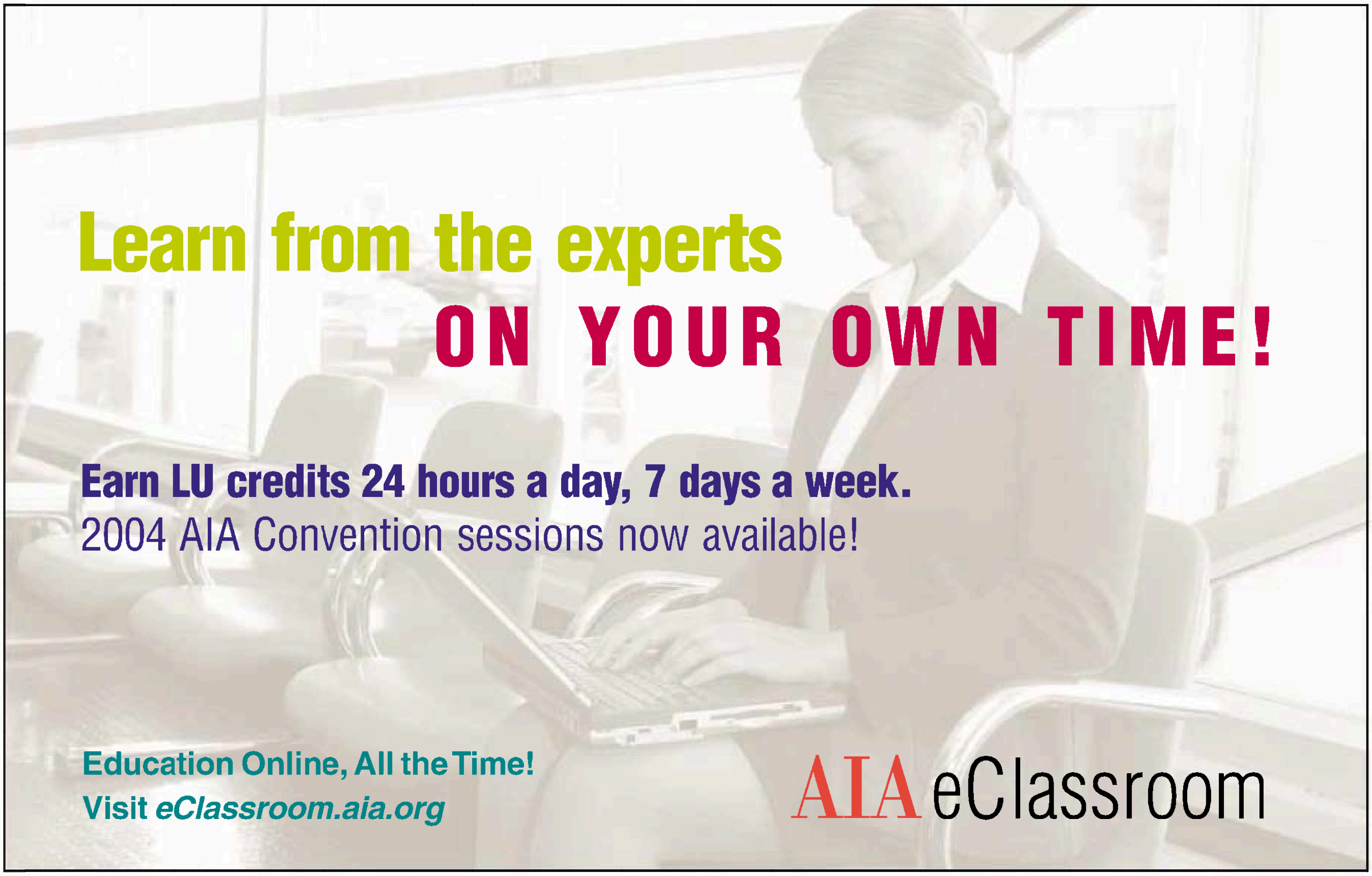
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2004 Architectural Record Innovation Conference

November 15/16, 2004
Millennium Broadway
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Because tall buildings present so many architectural and engineering challenges, and are often well financed, they frequently inspire research and development and are proving grounds for new structural, mechanical, electrical and safety breakthroughs. The 2004 Architectural Record Innovation Conference will present case studies of the innovative aspects of three tall buildings in various stages of completion. The case studies will include presentations by individual members of the design team: architect, structural, and environmental engineers.

Keynote Speaker:
David Gottfried,
President, WorldBuild,
and founder of the U.S.
Green Building Council
and World Green
Building Council

Building: Deutsche Post Cologne, Germany
Architect: Murphy/Jahn
Presentation Leader: Helmut Jahn

Building: New York Times Tower, New York
Architect: Renzo Piano Building Workshop / Fox & Fowle Architects
Presentation Leader: Renzo Piano (Invited) / Bruce Fowle

Building: Freedom Tower, New York
Architect: Skidmore Owings & Merrill, New York
Presentation Leader: David Childs

Ron Klemencic, Chairman, Council on Tall Buildings and Urban Habitat, will lead panelists in a discussion of the ways in which innovative technologies developed for tall buildings influence all kinds of architecture.

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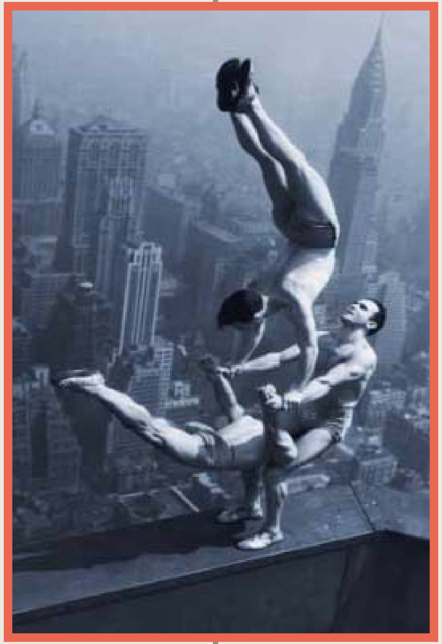

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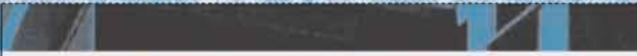

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- ☐ (1) Architect
- ☐ (2) Engineer
- ☐ (3) Designer
- ☐ (4) Specification Writer
- ☐ (5) Interior Designer
- ☐ (6) Contractor or Builder
- ☐ (7) Lighting Designer
- ☐ (8) Other

2. In what type of organization do you work?
- ☐ (9) Architectural or A/E Firm
- ☐ (10) Commercial, Industrial or Institutional
- ☐ (11) Contractor or Builder
- ☐ (12) Government Agency
- ☐ (13) Interior Design
- ☐ (14) Lighting Design
- ☐ (15) Other

3. Building Types you are currently working on?
- ☐ (16) Commercial
- ☐ (17) Educational
- ☐ (18) Healthcare
- ☐ (19) Industrial
- ☐ (20) Multi-Family Residential
- ☐ (21) Single-Family Residential
- ☐ (22) Other

4. Reason for Inquiry?
- ☐ (23) Current Planning
- ☐ (24) Future Planning
- ☐ (25) Both

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Business Development for Architects Conference

October 26-27, 2004, Capital Hilton, Washington D.C.

Find the Project... Meet the Client... Nail the Interview... Get the Job

WHAT IT IS

Getting new work is one of the most important and demanding jobs faced by any architect. At *Architectural Record's* first ***Business Development for Architects Conference*** you'll find out what markets will be strongest in the coming years and how to size up the competition. You'll get tips on how to find project opportunities, meet potential clients, get to the top of the shortlist, and negotiate a good contract.

IT'S FOR ARCHITECTS

This conference isn't just for the marketing department. It's been designed for principals and associate architects who take an active role in getting new work. Whether you're starting a new firm, a veteran working an aging client list, or a recent graduate who wants to learn what they never taught you at school, this event is one of the best investments you'll ever make.

NETWORKING RECEPTION - Tuesday, October 26 - 6:00 - 7:30 PM
CONFERENCE SESSIONS - Wednesday, October 27
CONTINENTAL BREAKFAST AND REGISTRATION - 7:00 AM - 8:00 AM

Where's the Work Going to Be?

Cliff Brewis, Regional Director, Editorial Operations, **McGraw-Hill Construction Dodge,** will tell attendees where architects should find opportunities in the coming years.

The Changing Face of Competition

Kermit Baker, Hon. AIA, Chief Economist, **American Institute of Architects**, will tell conference attendees how AIA's recent Firm Survey shows that firm demographics are changing, putting different types of firms in competition with each other.

Contact: How Successful Architects Find New Clients

Kenneth Caldwell, Caldwell Communications, will lead a discussion by a panel of architects who've promised to reveal what everyone wants to know: how they locate who's got work, how they make contact with them, and how they turn those contacts into jobs.

Panelists include: Frank Brooks, AIA, Chairman, **Freeman White; David Greusel, AIA**, Principal, **HOK Sport + Venue + Event; Gregg Pasquarelli**, Principal, **ShoP/Sharples Holden Pasquarelli;** and **Scott Simpson, FAIA,** President and CEO**, Stubbins Associates**

Crowd Control: How to Rise Above the Fray

Joan Capelin, Hon. AIA, FSMPS, FPRSA, President,
Capelin Communications

The services your firm offers are better than those offered by your competition, but prospective clients don't seem to grasp this. After Joan Capelin's presentation, you'll know how to stand out from the crowd of competitors. Don't sell yourself short!

SPECIAL FEATURE: "A Conversation with Harold Adams, FAIA, retired CEO of RTKL". Mr Adams will be interviewed by Robert Ivy, FAIA, *Architectural Record's* editor in chief.

Why I Didn't Hire You—Clients Speak Out

Joy Habian, Assoc. AIA, Moderator

A government official, a hospital administrator, a developer, and a university official, all of whom regularly hire architects, will explain what architects do right and wrong when making proposals and interviewing.

Panelists include: Michael Allen, Vice President, **Hines; Ronald Cottrell,** V.P. Planning & Corporate Development, **Martha Jefferson Hospital; William Haverly,** Director of Capital Planning, **University System of New Hampshire;** and **Charles Matta, FAIA,** Program Coordinator, **General Services Administration**

Closing the Deal Without Losing Your Shirt

Michael De Chiara and Carol Patterson, Zetlin & De Chiara

Many architects are surprised to find that the nice people who've almost hired them begin employing tactics intended to pressure them into signing unfair contracts. Two attorneys who frequently assist architects in negotiations will show audience members what to watch for when closing, how to prevent mistakes, and when it's best to walk away.

Editorial Director: Charles Linn, Managing Senior Editor, *Architectural Record* (E-mail:Charles_Linn@McGraw-Hill.com)

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Program title: **"Green product evaluation necessitates making trade-offs," sponsored by USG, (09/04, page 197)** **094SPONL**

AIA/CES Credit: This article will earn you one AIA/CES LU hour of health safety welfare credit. (Valid for credit through September 2006)
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3.	a	b	c	d	**8.**	a	b	c	d
4.	a	b	c	d	**9.**	a	b	c	d
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Program title: **"Bright Ideas—Office Lighting 101," sponsored by Humanscale, (09/04, page 192a)** **094SPONM**

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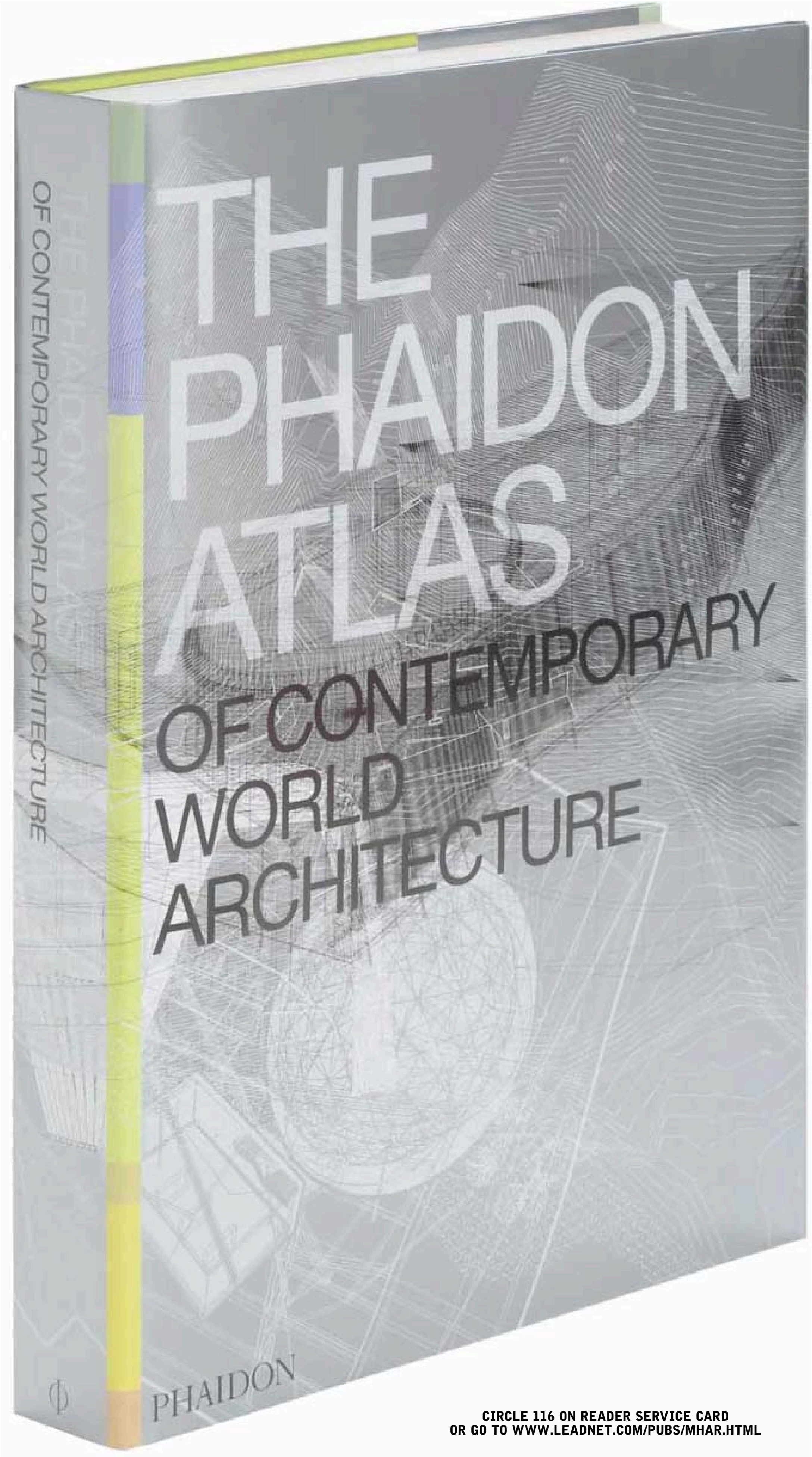

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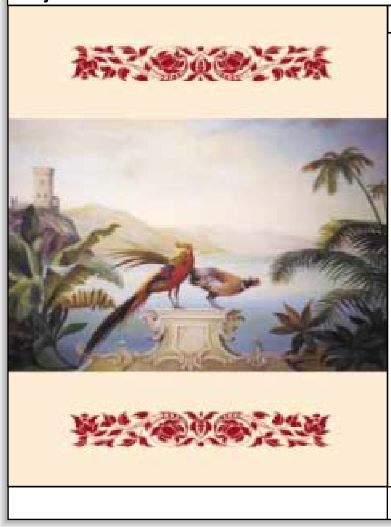

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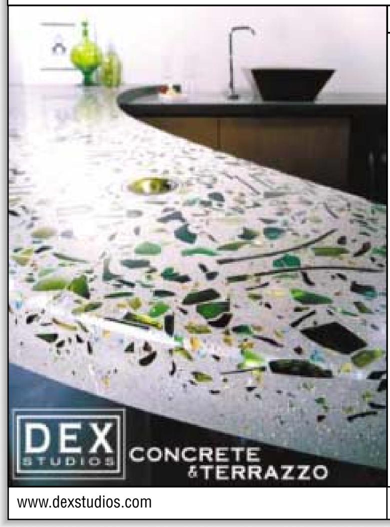

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www.dexstudios.com

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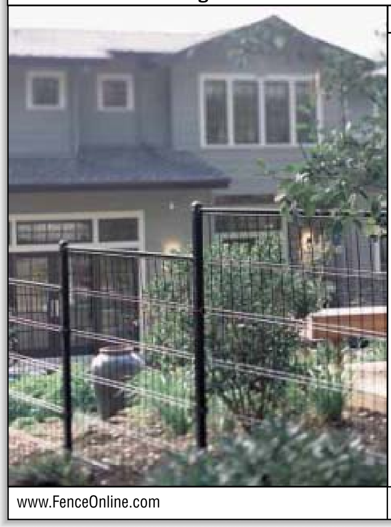
Master Halco, Inc.

Decorative Wire Fencing



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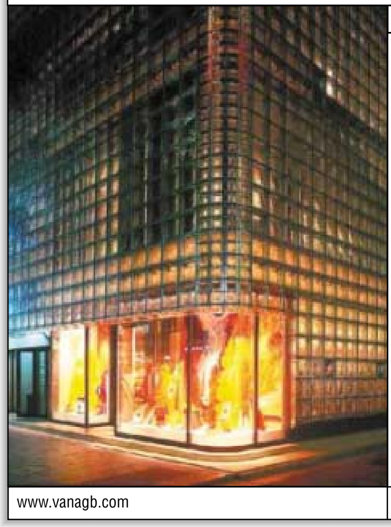

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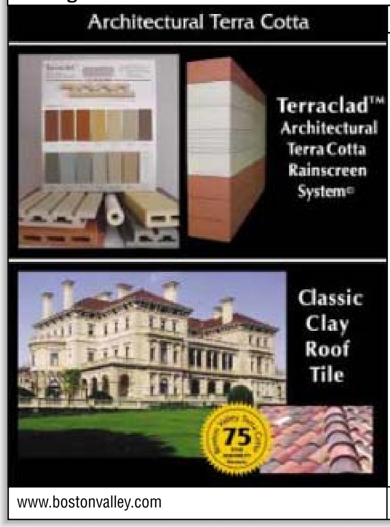
Architectural Terra Cotta
Terraclad™ Architectural Terra Cotta Rainscreen System©
Classic Clay Roof Tile
75

4 Masonry

Boston Valley Terra Cotta is manufacturing Terraclad™, Architectural Terra Cotta Rainscreen System. Produced in the U.S. in its Orchard Park, NY, factory, this system is available for new design and retrofit. Boston Valley Terra Cotta offers six standard profiles, six different widths, 8-in. to 16-in., in lengths from 12-in. to 60-in. as well as custom designs per the architect's specifications. Also available are 13 through-body colors and custom body colors, glazed finishes, and custom sizes and shapes upon request. Terraclad is naturally a green material, manufactured from BVTC's engineered clay body, designed to withstand the freeze/thaw climate. See their Web site for the new line of BVTC Classic Clay roof tile in unique colors and textures.

www.bostonvalley.com

⟲ 155

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Circle Redmont, Inc.

Glass Systems 800-358-3888

4 Masonry

Glass systems made simply beautiful: Circle Redmont's cutting edge technologies and passion for dramatic elegance shine through every glass system it manufactures. At the heart of the Circle Redmont philosophy is a firm commitment to the production of the highest quality glass products that combine intelligence with sophisticated precision; the result—simply beautiful. Call Circle Redmont or visit its Web site for more information.

www.CircleRedmont.com 156

Vermont Structural Slate Company

Architectural, Flooring & Roofing Slate Products 800-343-1900

ALLSTON BRANCH

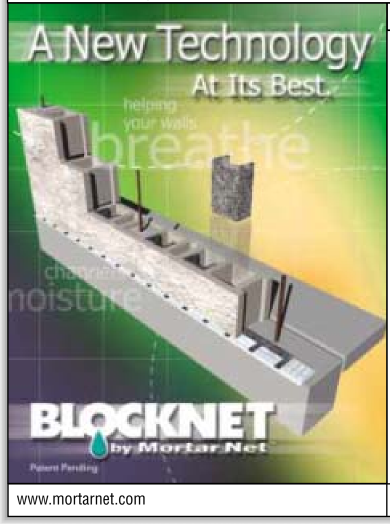
4 Masonry

For almost 150 years, Vermont Structural Slate Company has quarried and fabricated top-quality natural Vermont slates, producing all types of architectural, flooring, and roofing slate products. They complement their range of local materials with unique slates, quartzites, sandstones, and limestones from around the world. Vermont Structural Slate Company specializes in architectural projects and can help architects evaluate, detail, and specify natural stone.

www.vermontstructuralslate.com 159

Mortar Net USA, Ltd.

Concrete Drainage Systems



4 Masonry

Mortar Net introduces the New Single Wythe Block Drainage System. Water infiltration in concrete block can cause extensive damage such as efflorescence, staining or freezing, and thawing. The BlockNet™ System by Mortar Net USA, Ltd. is a simple solution that solves moisture problems by directing the flow of water. BlockNet is comprised of a specially shaped 3-3/8-in.-deep stainless steel flashing with integrated drip edge and a horizontal mesh element adhered to the top of the stainless steel, plus a separate vertical mesh element. The BlockNet system is effective in channeling water that infiltrates through voids and forms droplets or streams of water to the exterior of the wall.

www.mortarnet.com 157

Gage Corporation, Intl.

Cast Metal Wall Surfacing 800-786-4243

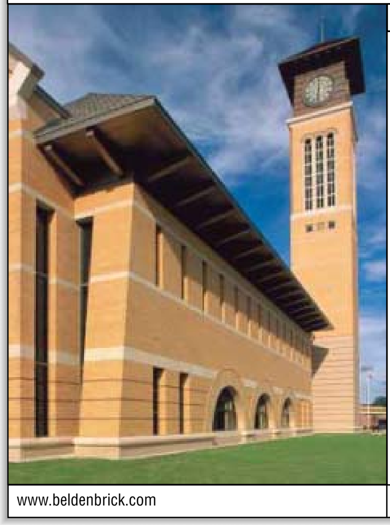
5 Metals

Gagecast® is a cast metal wall surfacing material suitable for a variety of interior architectural applications where patterns that feature high luster, relief, durability, and cost effective installation are a requirement. Twenty-eight designs are standard, however, custom collaboration is encouraged. Gagecast is one component of Gage Vertical Surfacing. Contact the factory for product literature and selected samples. Fax number 608-269-7622. Email gage@centurytel.net.

www.gageverticalsurfacing.com 160

The Belden Brick Company

Brick



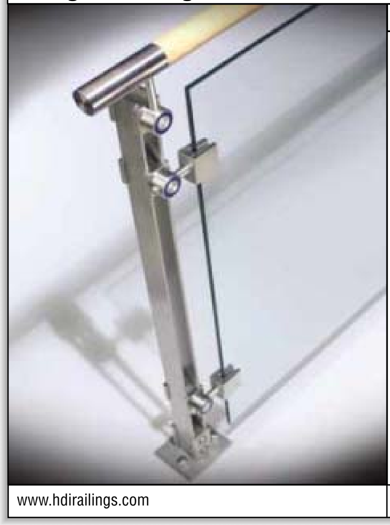
4 Masonry

Built for success clearly defines The Belden Brick Company, which offers a unique blend of manufacturing capabilities for what is considered by many to be the finest brick in the industry. Its manufacturing plants utilize both traditional and modern brickmaking equipment and techniques to provide a combination of over 400 colors, textures, and sizes of brick. The Belden Brick Company's staff is available at all times to answer technical questions or consult with you on any aspect of your interest in brick. Call any one of its authorized distributors or call the corporate office.

www.beldenbrick.com 158

HDI Railings, Inc.

Pre-Engineered Railings 717-285-4088



5 Metals

inox™ Stainless Railing System: Manufactured of corrosion-resistant stainless steel, inox is ideal for interior or exterior applications in commercial and residential facilities. Infill materials are available in perforated stainless steel, tempered glass, and stainless steel rods. Handrails are available in wood/stainless, stainless, or colored nylon. Curved rails and custom designs are available. Complete supply and installation service are available throughout North America, which includes *inox*, CIRCUM™, HEWI® Nylon, and d line™ railings. Email info@hdirailings.com.

www.hdirailings.com 161

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Melton Classics, Inc.

Online Resource for Balustrade Products

5 Metals

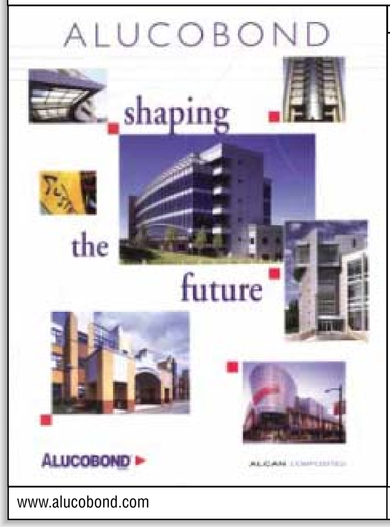
Announcing BALUSTRADES.COM. Melton Classics balustrades.com Web site provides the design professional with the industry's most comprehensive selection of maintenance-free and low-maintenance balustrade products, allowing the design professional to select the ideal product for any design, application, and budget. Classic balustrade systems are available in integrally pigmented synthetic stone, marble/resin composite, cast stone, high density polyurethane, and fiberglass in over 50 sizes and designs. Custom balusters, radius railings, radius stairs, and lightweight balustrades are available. In addition to its balustrade products, Melton Classics also offers architectural columns, cornices, moldings, and architectural elements.

www.meltonclassics.com

⇄ 162

Alcan Composites USA, Inc.

Alucobond® Material Brochure 800-626-3365



7 Thermal & moisture protection

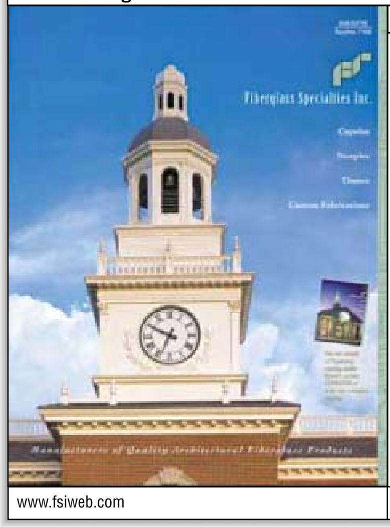
Totally new Alucobond® Material brochure in dramatic new format illustrates the use of Alucobond Material in a variety of innovative applications and colors. Alucobond Material is the original ACM (aluminum composite material) and has been used on more than 50,000 buildings worldwide. Alucobond Material is always the affordable solution. Email info.usa@alcan.com.

www.alucobond.com

⇄ 165

Fiberglass Specialties, Inc.

Custom Fiberglass Products


Fiberglass Specialties Inc.
Manufacturers of Quality Architectural Fiberglass Products

6 Wood & plastics

Fiberglass Specialties Inc. manufactures custom architectural products from FRP fiberglass. Custom products are often less than stick-built structures and arrive at the job site pre-ready to install. 2004 projects range from the replication of a 130-ft. historical lighthouse (with a full size cellular tower inside) to a custom cupola with a unique analong wind gage for a residential application. Each custom structure is designed around a tubular steel unitized body with architectural FRP panels affixed. Almost any size, shape, or texture can be replicated. Custom colors are available, and because they use low styrenge gel coats, yellowing, fading, and chalking are minimal. In-house architect (AIA) and design engineers are available.

www.fsiweb.com

⇄ 163

ATAS International

Aluminum Ceilings 610-395-8445

7 Thermal & moisture protection

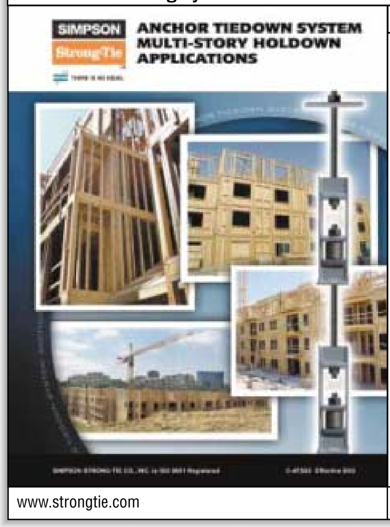
ATAS International, Inc. manufactures aluminum linear ceiling systems, which are snapped onto a suspended carrier. Round edge or square box style panels are installed with or without flush or recessed filler strips. Each profile has a choice of 3 widths that are interchangeable due to the increments of the carrier system. The carrier is pre-punched from .040 aluminum. Three finishes are available: Siliconized Polyester (.019 aluminum, 6 standard colors, and .024 aluminum in white only); Kynar 500® or Hylar 5000® (29 standard colors); anodized (clear or bronze). Perimeter trim and mouldings, in 12-ft. lengths, are the same material as the panel.

www.atas.com

⇄ 166

Simpson Strong-Tie Co., Inc.

Shearwall Anchoring Systems 800-999-5099



6 Wood & plastics

For multistory commercial buildings or apartment houses, Simpson's ATS (anchor tiedown system) provides an improved method for anchoring shearwalls to resist uplift forces caused by earthquakes and high winds. The patented concentric holdown system integrates vertical load resisting hardware easily and economically into standard wood frame construction up to five stories high. Anchor tiedown system features high load capacity, fast installation, no horizontal drilling, and take-up of 1-in. of wood shrinkage and compression per floor. It can be installed allowing rod offset up to 1-3/4-in. maximum per floor. Code recognized by ICBO (ER-5090) and COLA (RR-25326).

www.strongtie.com

⇄ 164

BASF

Building Envelope System 800-547-4004

7 Thermal & moisture protection

The BASF engineered building envelope system allows you total design freedom yet performs beyond expectations. Engineer the building envelope and unleash your imagination. BASF applies the unique properties of urethane chemistry to provide insulation and air barrier continuity throughout the building envelope: in the walls, on the roof, and at all construction joints. The BASF engineered building envelope meets Building and Energy Code requirements, and helps reduce energy operating costs, extend building life expectancy and improve occupant comfort. Ask how it can help you achieve LEED certification. Email walltite@basf.com.

www.basf.com/spray/sweet-ebe

⇄ 167

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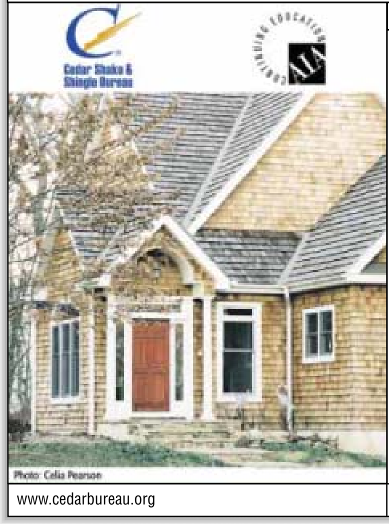
Cedar Shake & Shingle Bureau

Cedar Roofing & Sidewall 604-820-7700



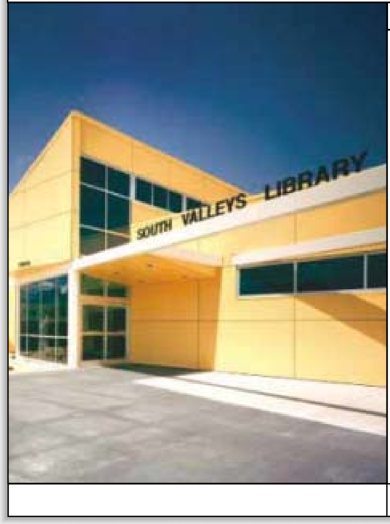
7 Thermal & moisture protection

The Cedar Shake & Shingle Bureau is a non-profit trade association founded in 1915. The organization provides installation instructions, AIA CEU educational seminars and technical advice. Member manufacturers produce Certi-label brand cedar shakes and shingles for both roofing and sidewall use as well as undergo random, unannounced third party inspections to ensure product quality. Certi-label brand cedar shakes and shingles are a renewable resource, durable, impact and wind resistant, and available with either pressure impregnated preservative or fire-retardant treatment. Some Certi-label products are available in pre-stained or pre-primed finish.

www.cedarbureau.org 168

Trespa North America, Ltd.

Exterior Cladding Systems 800-487-3772



7 Thermal & moisture protection

Trespa Meteon® is a unique exterior facade cladding system suitable for both new construction and re-cladding projects. Its weather resistance, high color stability, impact resistance, and non-porous surface structure make it the perfect material for a wide range of exterior applications. Trespa Meteon is available in a variety of standard solid colors, natural prints, and rich metallic hues as well as satin, gloss, and rock textures. Trespa is BEES listed and a member of USGBC.

171

CertainTeed Fiber Glass Insulation

Vapor Retarder Spec Sheet 800-233-8990

CertainTeed
MEMBRAIN
The SMART Vapor Retarder

7 Thermal & moisture protection

A two-page brochure describes the benefits and features of MemBrain™, CertainTeed's Smart Vapor Retarder. This unique product breathes to allow excess moisture to escape, reducing risk and liability of moisture-related problems in walls. The spec sheet also details the product performance and permeability.

www.certainteed.com 169

Cherry Tree Design

Stock & Custom Doors 800-634-3268

8 Doors & windows

Experience the artisan touch—sophisticated design, exceptional craftsmanship, natural warmth. Stock and Custom pocket doors, passage doors, room dividers, window coverings, closet doors—made in Shoji Style. Hardwood lighting and mirrors featuring contemporary, Arts & Crafts, and Asian styling. Hand-crafted in the USA using unsurpassed joinery, solid hardwoods, and beautiful durable facings. Perfect for commercial, hospitality, and residential projects. To learn more about Cherry Tree Design's complete product line, call their toll free number.

www.cherrytreedesign.com 172

Polyglass

Tile Roofing Underlayment

POLYGLASS
POLYSTICK TU
POLYSTICK

7 Thermal & moisture protection

Polyglass offers Polystick TU Plus™, a high quality, skid resistant tile roofing underlayment that is formulated to withstand heat up to 260°F. TU Plus is manufactured using patented ADESO™ technology, a "true" APP compound, glass fiber reinforced, with a high strength polyester fabric on the upper surface and aggressive self-adhesive compound on the bottom.

www.polyglass.com 170

IGT Glass

Anti-Reflective Glass 480-767-8220

glaströsch

8 Doors & windows

LUXAR reduces glare and reflection by 99.5%, making every application where it is used so clear that the glass is almost invisible. When high visibility is desired Luxar is the product of choice. It is an ideal product for storefronts, such as Toys R US, pictured, museums, stadiums, view homes and restaurants, display cases, and projection rooms. Contact IGT Glass for more information.

www.luxar.ch 173

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Jerome R. Durr Studio

Custom Glass Art 800-552-9836

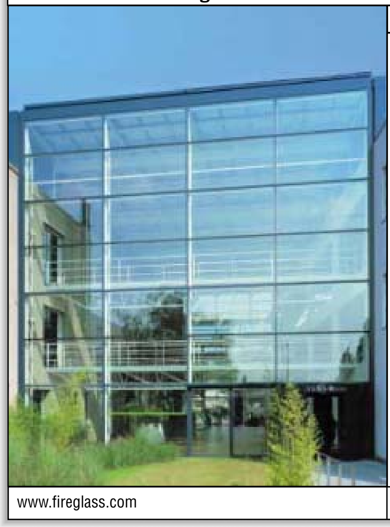
8 Doors & windows

Jerome R. Durr Studio, providing residential, liturgical, commercial, and public art since 1973.

www.jeromedurr.com 174

Technical Glass Products

Fire-Rated Steel Framing



8 Doors & windows

Technical Glass Products offers the Fireframes™ Curtainwall Series—fire-rated steel framing for large expanses of glass spanning multiple stories. Available for interior or exterior use, the Curtainwall Series carries fire ratings up to two hours. Custom exterior face caps allow a wide variety of appearances, including stainless steel. For more information visit the company's Web site.

www.fireglass.com 177

Nathan Allan Glass Studios, Inc.

Textured Glass Panels 604-277-8533

CRYSTAL GLASS SERIES

8 Doors & windows

Crystal Glass Series is a new addition to Nathan Allan's exclusive Josiah J Collection. Crystal Glass Series incorporates a special glass frit that is fused to the back of the glass to add a stunning and unique textured feel to the glass. Originally developed for Four Seasons Hotel in Whistler, BC to provide unique glass light covers, with the ability to hide the hot spots of the lighting sources, Crystal Panels are now being used in illuminated feature walls, with added colors such as Cognac or Cobalt Blue. Available in clear or colored glass. Catalogue available. Email bm@nathanallan.com.

www.nathanallan.com 175

VETROTECH SAINT-GOBAIN

Fire Rated Glass & Systems Solutions 888-803-9533

VETROTECH FIRE RESISTANCE Saint-Gobain Glass Solutions

8 Doors & windows

VETROTECH Saint-Gobain has had one of the industry's broadest range of clear, fire, and safety rated glazing products since 1983. The complete range of products offered in North America is now domestically produced, thereby assuring an unsurpassed level of service and responsiveness to the customer. The VDS Framing System features a narrow profile steel system designed for 1- and 2-hour rated glazed door, wall, and window sections. The SGGSwissflam Structure features a 60-minute rated "flush-joint" glazed wall system, which results in a maximum clear vision area with a minimal profile. The 20-minute ALL-GLASS DOOR is the world's first All-glass Fire rated door.

www.vetrotechUSA.com 178

Special-Lite, Inc.

FRP Doors 800-821-6531

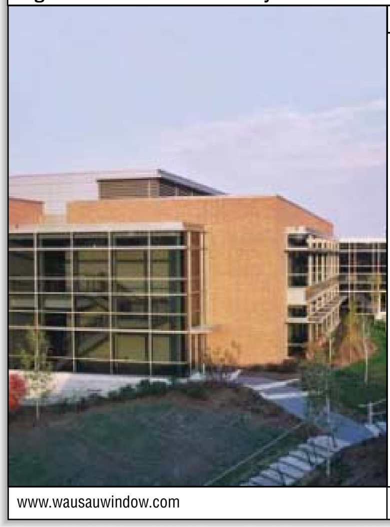
8 Doors & windows

The SL-17 FRP (Fiberglass Reinforced Polyester) Flush Doors offer trouble-free performance and long-lasting beauty in the most demanding interior and exterior entrance applications. They're the logical choice where heavy traffic, adverse environmental conditions, and physical abuse or vandalism are expected, due to the extreme scratch, dent, stain and corrosion resistance provided by Class 1 aluminum anodizing, through-colored face sheets, and Special-Lite's unique approach to door design and construction. These light weight and durable doors also help prolong the life of hardware and framing to deliver the lowest total cost of ownership for the entrance system.

www.special-lite.com 176

Wausau Window and Wall

High-Performance Curtainwall System 877-678-2983



8 Doors & windows

Wausau Window and Wall Systems® high-performance SuperWall system with integrated sunshades helps to unify Flad & Associates' award-winning design of ACT, Inc.'s new Iowa City campus—home of the nationally recognized college placement assessment tests. Wausau worked closely with the architects, general contractor McComas Lacina, and glazing contractor Netom Enterprises, Ltd. to provide a curtainwall system with a 2.5-in. face and depths up to 13-in. Canted and curved, certain sections required full-height curtainwall sloping five degrees. Sunshades were integrated within the total glazing system including some measuring up to 45-in. deep to help reduce solar heat gain and HVAC loads.

www.wausauwindow.com 179

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Armstrong Ceiling Systems

Custom Color Capability 877-276-7876

9 Finishes

Faux Coat, a new custom paint finishing technique developed by Armstrong, produces a rich, hand-crafted effect that appears almost antiqued in nature. Designed for use on Armstrong TinCraft™ and Ledges™ ceilings, the effect is ideal for use in specialty stores, hotels, restaurants, clubs, and other environments that have a need for custom colors. Visuals in the TinCraft line all feature embossed metal looks that were popular in the early 20th century, while Ledges features a look that is reminiscent of Old World raised panel woodwork.

www.armstrong.com/ceilings ⇄ 180

Nova Distinctive Floors

Cork Floating Floors

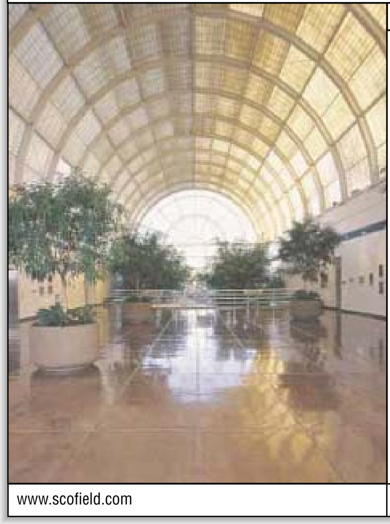
9 Finishes

Nova Cork floating floors artistically embrace design, function, and environmental consciousness. Manufactured in 1-ft. by 3-ft. "klick" (glueless) system planks that don't adhere to the subfloor, Nova Cork's 2004 line boasts 28 designer patterns including Quadro (shown), that are sure to bring beauty and comfort to your home. Harvested from forests that meet stringent environmental, social, and economic standards, Nova Cork, Linoleum, and Underlayment products have received the "GreenSpec" distinction from Building Green, Inc. and offer a 20-year residential and a 10-year commercial warranty. Fax number 310-830-9589.

www.novafloorings.com ⇄ 183

L. M. Scofield Company

Concrete & Cementitious Flooring 800-800-9900



9 Finishes

Stylish Scofield flooring systems: For beauty and durability, concrete and cementitious toppings provide stylish flooring for high traffic areas in offices, lobbies, public spaces, food service, and retail areas. Scofield Systems offer diverse choices—ranging from monochromatic toppings to translucent, antique stains for faux finishes and dramatic graphics. Email info@scofield.com.

www.scofield.com ⇄ 181

Teragren LLC

Bamboo Flooring, Panels & Veneer 800-929-6333

9 Finishes

Teragren manufactures beautiful, durable, renewable interior bamboo solid strip and wide plank flooring, stair components, panels and veneer. Featured in the Hyatt Maui, Timberland stores, Seattle Central Public Library, and other commercial and residential installations nationwide. 25% harder than oak and 2-1/2 times more stable than maple. Available in two grains and colors. Contributes to LEED™ as a rapidly renewable resource and low-emitting material. Coating materials water-based, solvent-free. 25-year residential and 5-year commercial finish warranties. Visit the company's Web site for more information. Contact Teragren for samples and/or brochure.

www.teragren.com ⇄ 184

Nevamar Company, LLC

Decorative Finishes 800-638-4380

9 Finishes

Mysterious, sexy, and illuminating, new Nevamar Manhattan laminate actually appears to emit light from within. With their exclusive Armored Protection™ Surface, it meets all NEMA performance standards, so it's suitable for horizontal and vertical applications. Available in three natural metallic hues, Manhattan is among the 18 new additions to the broad Nevamar line.

www.nevamar.com ⇄ 182

Viva Ceramica

Xilo Flooring

9 Finishes

Colors meet the purest clays forged and precompacted in a higher than normal thickness (12mm). Complete penetration between body and color grants lasting optical results, maximum ultimate tensile strength, absolute resistance to acids, scratches, frost, and dirt. Totally environmentally friendly manufacturing process, assured by ISO9001 quality system. Certified plant of E milceramica in Fiorano Modenese; series XILO is guaranteed 20 years for private homes and 10 years for public areas. For further information please consult Viva for updated price list and sales conditions.

www.cerviva.it ⇄ 185

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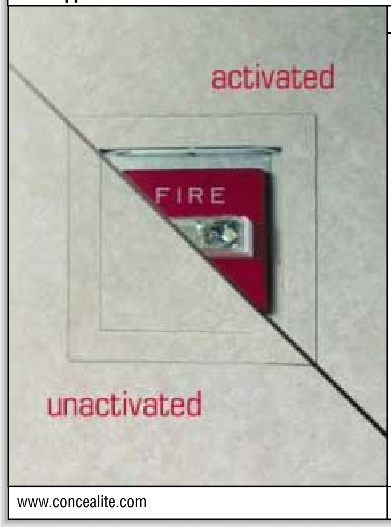
Concealite Life Safety Products

Fire Appliance Fixture 507-825-2907



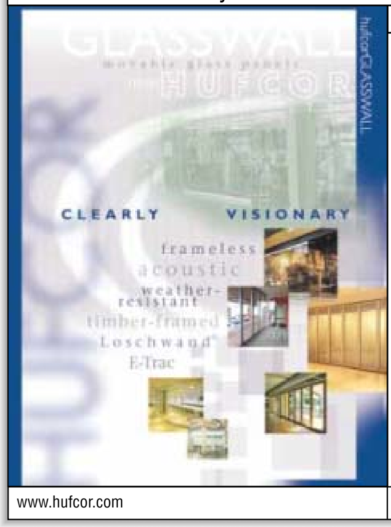
10 Specialties

Make those necessary design evils, such as fire appliance fixtures, disappear. Conceal-Alarm fixtures allow your design to take center stage. While an alarm appliance is deactivated, it hides behind a door decorated to blend in with your wall. Upon activation, Conceal-Alarm rotates 180°, revealing the strobe and/or horn appliance for patrons to see and hear. Once the emergency has passed and the system is deactivated, the Conceal-Alarm will return to the closed position, once again revealing your design. For more information or specification sheets on Conceal-Alarm, visit their Web site or call.

www.concealite.com ♲ 186

Hufcor, Inc.

Movable Glass Partition Systems 800-542-2371



10 Specialties

Hufcor introduces a complete new line of movable glass partition systems featured in a new brochure. The line features frameless storefront style panels with patent-pending batwing passdoors, acoustic and weather resistant glasswalls without floor tracks, woodclad products, and electrically controlled E-Trac tracking system and Loschwand overhead systems. Call or visit the Web site.

www.hufcor.com ♲ 187

Panelfold, Inc.

Acoustical Folding Partitions

10 Specialties

Sonicwal® acoustical wood folding partitions are Panelfold's best kept secret. Acoustical ratings to STC 50 and NRC .70, manually or electrically operated. Sonicwal folding partitions may be specified in a wide variety of surfacing materials, including wood veneer, colorful vinyl laminates, high-pressure decorative laminates, wall carpet, polyolefin textile wall covering, and COM. Complete information on Panelfold's broad lines of folding doors, acoustical folding partitions, operable walls, relocatable walls, and NRC .75 Acoustical Panels is available in its Architectural Products Catalog and from Sweets CD. Panelfold also has available an Electronic Library on CD-ROM containing product information, downloadable three-part specifications, and CAD drawings.

www.panelfold.com ♲ 188

Design 21

Magazine Holders 954-471-6940

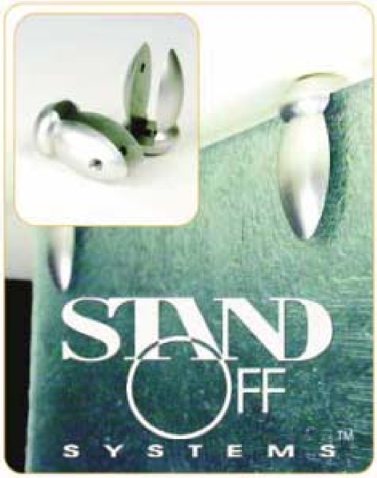
11 Equipment

Magazine holders are now produced with heavy gage anodized aluminum in combination with multilayer plywood from Finland. There are two sizes available. Also produced: Sistema 1-2-3 modular bookcases, CD-DVD display units in aluminum with stainless steel feet. Systems are floor to ceiling; 8-ft., floor to wall; 7-, 6-, and 5-ft. Please check the Web site. Fax number 954-972-6100.

www.designtwentyone.com ♲ 189

Gyford Productions

Display Case & Shelving Equipment 775-829-7272



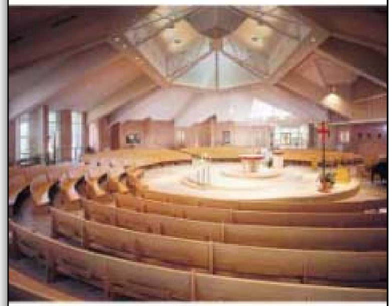
11 Equipment

The 3/4-in. gripper can attach to any surface, or be suspended by cable systems and is interchangeable with all StandOff Systems™ product lines. It comes in various sizes, holding substrates from 1/4-in. to 3/4-in. Gyford Productions, creator of the original StandOff Systems, stocks over 250 components. Most items ship same day. Complete design and technical support available. Made in USA. Call for a free catalog.

www.standoffsystems.com ♲ 190

New Holland Church Furniture

Curved Church Pews 800-220-1465



12 Furnishings

Curved pews are "Round For A Reason"™ and are designed and manufactured by New Holland Church Furniture. Curved pews are designed for maximum seating, curved for efficient use of space, designed to enhance worship, created for community, uniting the family of God. New Holland Church Furniture is a certified member of the Architectural Woodwork Institute (AWI), so you can be assured of the very highest quality. Email nhcw@newhollandwood.com.

www.newhollandwood.com ♲ 191

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TO ADVERTISE: Contact Deidre Allen
T: (212) 904-2010 / F: (609) 426-7136
deidre_allen@McGraw-Hill.com

Precious Metal Design

Metal Furniture — 360-441-2652

PMD
Precious Metal Design

12 Furnishings

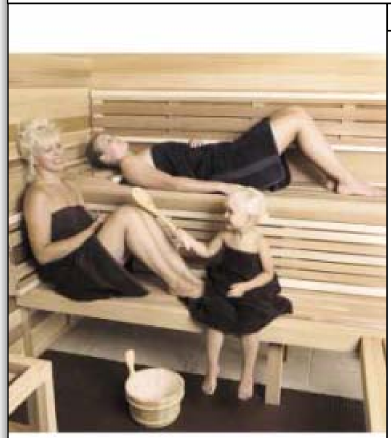
Precious Metal Design introduces their newest line of furniture. From custom machined hardware to precision laser cutting, they have in-house CAD designing and a professional metal craftsman to assist you with your needs. Contact them for brochures and metal samples or product consignment information. Showroom locations include the Ralph Hays Contemporary Design Showrooms at the Seattle Design Center and the San Francisco Galleria Design Center, and the Paragon Collections at Florida's Design Center of the Americas (DCOTA) in Dania Beach, Florida. Email preciousmetal@4pmd.com.

www.4pmd.com

192

Finlandia Sauna Products, Inc.

Precut Saunas — 800-354-3342



13 Special construction

Finlandia Sauna has manufactured exclusive and authentic saunas since 1964. Finlandia offers precut sauna packages and modular sauna rooms as affordable luxuries that can be included in any remodel or new construction. The company markets four all-clear western softwoods and is the only manufacturer to use 1-in. by 4-in. paneling, instead of the cheaper 1/2-in. by 4-in. material used by others. Finlandia's packages include all room parts, a choice of a Finnish-made electric heater, a prehung door with choice of glass, and all necessary accessories. Finlandia's exciting new heater, the EverReady, is an excellent option for the person always on the go. Fax number 503-684-1120. Email info@finlandiasauna.com.

www.finlandiasauna.com

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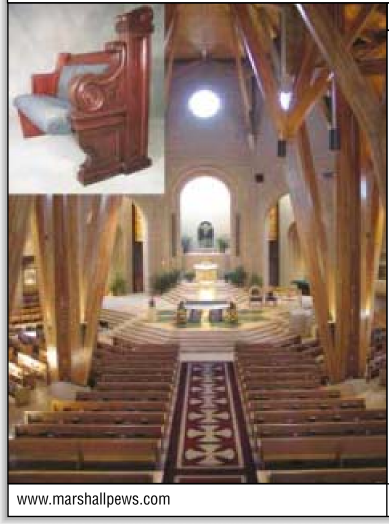
The Marshall Company

Hardwood Pews — 208-642-3344



12 Furnishings

For over 75 years, The Marshall Company has offered distinctive church furnishings throughout the U.S. and Canada. A longtime leader in the church furniture business, Marshall prides itself on being one of the few companies in the U.S. to still manufacture only quality solid hardwood pews. That means no veneers, no chipboard cores, no plastic laminates, just the classic beauty and durability of solid Northern red oak. But materials aren't everything; Marshall's highly skilled craftsmen are dedicated to designing furniture that is beautiful and functional, as well as being affordable. Fax number 208-642-9537. Email pews@marshallpews.com.

www.marshallpews.com

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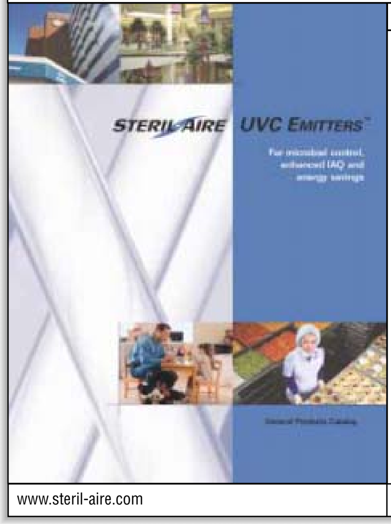
Steril-Aire

Air Filtering Systems — 800-2STERIL



15 Mechanical

General products catalog showcases Steril-Aire UVC Emitters™ for mold and microbial control in HVAC systems. The devices enhance IAQ and infection control, reduce absenteeism, save 15% to 20% on energy costs, and slash A/C coil cleaning costs. Steril-Aire is a pioneer in "UVC for HVAC™" because its multi-patented devices offer greatly increased output in cold and/or moving air environments, providing superior germicidal performance and longer service life. Products include UVC devices for commercial, residential, health care, school, food processing, and industrial applications. Email sales@steril-aire.com.

www.steril-aire.com

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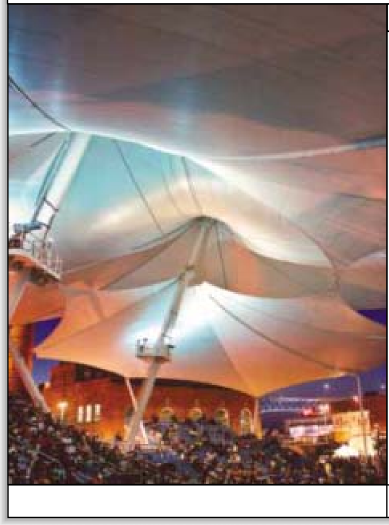
FabriTec Structures

Tensile Fabric Structures



13 Special construction

FabriTec Structures introduces a new generation of tensile fabric technology. Its highly specialized fabric structures utilize the most advanced architectural materials available and are non-combustible, both thermal- and UV-resistant, and can offer full weather protection. With virtually unlimited design options and applications, FabriTec's products are both practical and often visually spectacular. Designers can choose fabrics from a wide range of color and translucency and enjoy a cost effective and "fast-track" alternative to conventional building systems. FabriTec Structures provides clients with complete design/build services, including concept development, engineering, fabrication, project management, and installation.

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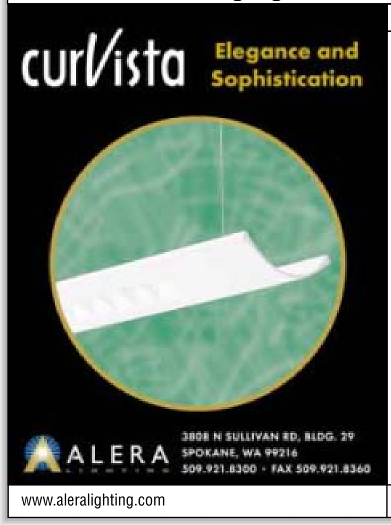
Alera Lighting

Architectural Fluorescent Lighting — 509-921-8300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16 Electrical

Architectural Lighting has reached its pinnacle with the curVista direct/indirect luminaire by Alera Lighting. This 9-1/2-in. wide by 2-1/2-in. deep elegantly curved housing features solid or perforated baffles on each side for direct light, while the indirect components cast light upward and around for a soft, balanced glow. Available with one, two, or three T8, T5, or T5HO lamps in 4-ft. and 8-ft. lengths with modular mounting points. Unique, patent pending inner die cast aluminum joiners provide consistently straight rows. Applications include offices, retail, schools, health care (overlay available), reception areas, and anywhere distinct, attractive lighting is desired.

www.aleralighting.com

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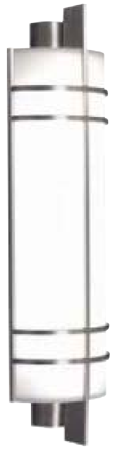
Cooper Lighting

Lighting Fixtures 770-486-4800



16 Electrical

Part of the new meticulously detailed INVUE™ collection from Cooper Lighting, ICON offers solutions for full cutoff compliance (Dark Sky Compliant), spill light control, and path of egress illumination, while merging the latest in high efficiency lamp technologies. ICON's gentle curves and sleek profile are offered in two unique arm choices combined with structural element options, multiple housing sizes and lamp options, and precision built segmented optical systems. Designed to sustain a lifetime of tough environmental conditions, ICON's precisely engineered die-cast aluminum housing utilizes an IP65 rated gasketing strategy combined with a seamless 5 stage polyester powdercoat finish to seal out contaminants.

www.cooperlighting.com

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Lumux Lighting Inc.

Efficient Architectural Lighting

16 Electrical

Lumux Lighting Inc., an architectural lighting company, distinguishes itself by manufacturing innovative, energy efficient, aesthetically and cost effective lighting fixtures serving the residential, commercial, and industrial markets. Lumux's creativity, quality, and unwavering commitment to service are the characteristics that make it a reliable architectural lighting source for architects, lighting designers, and specifiers. Lumux has the largest selection of stainless steel and LED driven fixtures in stock for any design and build type of applications. Full catalog online.

www.lumux.net

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G-Squared

Architectural Ceiling Fans and Lighting 877-858-5333

16 Electrical

Enjoy art… the Cirque ceiling fan, a high performance dynamic sculpture, Good Design Award winner. View silver and mahogany blade versions on their Web site. Includes 50 W dimmable light and touch control system, remote control available. Whisper quiet, powerful, and beautifully made, this timeless design can be used on 8-ft. ceilings or on cathedral ceilings with optional downrods up to 6-ft. long. Suitable for sloped ceilings. Lifetime warranty. To buy high-design architectural fans and lighting, please visit G Squared's Web site or call between 6 AM and 6 PM PST.

www.g2art.com

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Prima Lighting Corp.

Light Fixtures 866-885-4915

16 Electrical

The Multilight fixture series gives you complete freedom and control over your light source with high-end, elegant, and intriguing style. Easily direct the light exactly where you want and tailor the power to your needs. Choose a nine, six, four, three, or two light configuration available as a wall (shown), pendant, floor, or table light. Chrome and matte silver finishes. Clean, architectural multipoint canopies are available for the pendants. Please visit Prima Lighting's Web site or call to find out more about its breakthrough OPUS line of contemporary architectural lighting.

www.primalighting.com

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Hydrel

Pole Mounted Lighting

16 Electrical

Hydrel's distinctive new G2™ design signature, introduced earlier this year in the highly refined G2 Building Mounted series, has been expanded with the launch of G2XTEND pedestrian-scale pole mounted lighting. The pedestrian-scale dome or wedge shaped luminaires with matching poles complement a variety of building styles and site design schemes. And G2XTEND may be specified with any of four full cutoff optical systems—all rotatable in 90°F increments to illuminate pathways, plazas, campuses, building entrances, parking areas, and avenues.

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Sternberg Vintage Lighting

Architectural Style Luminaires

16 Electrical

Sternberg Lighting introduces the new VILLA Luminaire. This fixture is an architectural splendor with its curved roof and sweeping round, open look. Its NIGHTSKY™ OPTI-SHIELD louver optic system will provide sharp type III or type V cut-off on any street, walkway, or parking area. A type III or V refractor can also be used. Three fixture sizes 1730, 1720, and 1710 models provide flexibility to fit the scale of your design. For that modern contemporary look, specify the VILLA Luminaire. The installation shown (inset) is at Morgan State College in Baltimore, MD. Request a catalog for more information. See the Sternberg Web site.

www.sternberglighting.com

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sought by Associated Architects, Ltd. w/exp in using AutoCAD s/ware to prep project dsgns & plans. BS in Architecture w/3 yrs exp in retail, commercial & hotel projects, interior dsgn & prepn of construction docs & specs. Resume to: HR, 4155 E. Jewell Ave., Denver, CO 80222

FIELD ASSISTANT ARCHITECT

Assist in preparing big packages for clients; supv construction process on site; collect info & assist in preparation of engg plans & dsgns; assist in materials quantity take-off using digitizers & s/ware; & assist in preparation of in-site construction lay out using dsgns & plans through subordinate personnel; bach in Architecture; Spanish lang helpful but not reqd. 40hrs/wk; prevailing wage. Resume to: TCG, 2555 Marconi Dr., Ste 100, Alpharetta, GA 30005.

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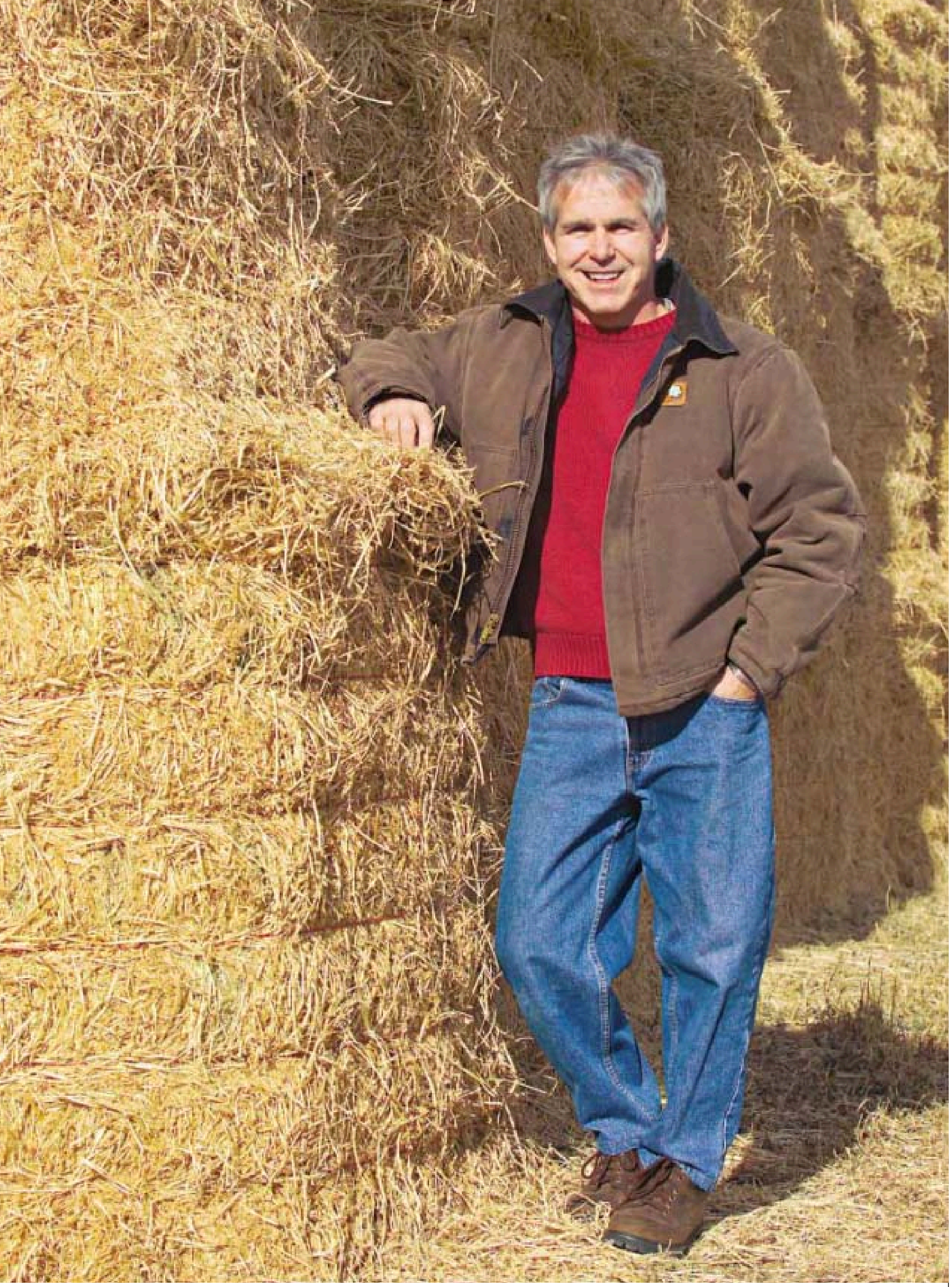

Robert Young helps rebuild tribal lands, one house at a time

Interviewed by Deborah Snoonian, P.E.

"Give a man a fish and you have fed him for today; teach a man to fish and you have fed him for a lifetime." That's the philosophy behind the Red Feather Development Group, a nonprofit organization based in Bozeman, Montana, which works with Native Americans to enable them to build straw-bale houses on reservations. Robert Young, once a successful garment industry executive in Seattle, founded the operation in 1994 after reading a newspaper article about three Native elders who froze to death because of substandard housing. RECORD *spoke to Young as he and his staff prepared for a build last July on the Turtle Mountain Reservation in North Dakota.*

Q: *Why are you using straw-bale construction for your projects?* Straw-bale structures are energy-efficient and cost a fraction to heat compared to typical houses on tribal lands. We try to design the structures in such a way that volunteers and nonskilled labor can handle much of the construction themselves. And the homes also make use of local resources. On the Navajo reservation in Arizona and New Mexico, tribal members formed a company called the Navajo Agricultural Products Industry. They're baling wheat grown on the reservation and selling it for a profit to local builders. We'll be using bales from this company in our construction project in North Dakota next month.

You've built mostly houses, but the North Dakota project is a little different. Can you share some details? We'll be working with Turtle Mountain Community College to build an environmental research center. It's about 1,600 square feet, the largest project we've done so far. The center's going to highlight straw-bale-construction techniques and other environmental concerns that face that community, like water conservation and reducing pesticide use in farming. The project will allow them, hopefully, to teach straw-bale-construction methods at the tribal college. The community has lost about a third of their homes due to black-mold infestation, and they already had significant housing problems to begin with. If all goes as planned, they'll be able to rebuild their housing stock using straw-bale techniques.

How do you choose which tribes to work with? Right now we're focused on assisting the Northern Cheyenne tribes in the Plains states, as well as building a coalition among tribes in the southwestern U.S. Those are locations where the climate makes it feasible to build straw-bale homes—cold and dry or hot and dry. These areas also have the greatest need for new housing. At the Pine Ridge Reservation in South Dakota, for instance, where we did our first project, 40 percent of the homes have no running water, and many lack electricity. Through building these structures, we want to establish programs that can be managed by tribal members themselves, so they can oversee the construction of houses or other buildings for their communities.

What do you find most rewarding about this work? If we can give tribal members a tool for turning housing into a self-sufficient enterprise, we're achieving a big part of our goal. Most of these people live in extreme poverty. If they had energy-efficient homes, they'd have more money for food, clothing, education. By fulfilling one need—adequate housing—the ripple effect is enormous.

Photograph by David Scott Smith/RightImage

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